

Alaska Clean Water Actions Program Unfunded High Priority Actions for Fiscal Year 2014

The following is a list of actions needed on waters (sorted by region of the state) that are considered High priority by the ACWA agencies. Due to limited State funding the list may be useful to other organizations to use in other grant and funding requests.

The actions listed are not a funding solicitation. The annual ACWA grant solicitation can be found http://dec.alaska.gov/water/acwa/acwa_index.htm along with a description of currently funded (FY14) ACWA grant projects and general information about the ACWA program. Please note, actions below include those requested in the FY14 ACWA grant solicitation that we may not have received an application for or that were not funded.

Click on the water's name to go to a page that describes the Action(s) that the ACWA agencies would like conducted over the next few years to meet the Goal(s) described. The date ranges on the Action(s) is to show that they are current and applicable for the time period listed. Note that some waterbodies have more than one page of actions.

If a waterbody you are concerned about is not on the list below, you may contact one of the staff listed to determine if it has been nominated, is considered a high priority, or if the agency currently has an on-going project.

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List of Acronyms

ADF&G – Alaska Department of Fish and Game
ACWA – Alaska Clean Water Actions
APDES – Alaska Pollutant Discharge Elimination System
ARRI – Aquatic Restoration and Research Institute
ATV – All Terrain Vehicles
AWQMS – Ambient Water Quality Monitoring System
BEACH – Beaches Environmental Assessment and Coastal Health
BMP – Best Management Practice
BTEX- Benzene, Toluene, Ethyl-Benzene, Xylene
CBJ – City and Borough of Juneau
DEC – Alaska Department of Environmental Conservation
DNR – Alaska Department of Natural Resources
EPA – U.S. Environmental Protection Agency
FC – Fecal Coliform bacteria
GIS – Geographic Information System
JWP – Juneau Watershed Partnership
NMFS- National Marine Fisheries Service
NOAA – National Oceanic and Atmospheric Administration
NRCS- Natural Resource Conservation Service
PAH- Polycyclic Aromatic Hydrocarbon
QAPP- Quality Assurance Project Plan
STORET – EPA’s Storage and Retrieval Data Warehouse
TAH- Total Aromatic Hydrocarbon
TMDL – Total Maximum Daily Load
USFS- U.S. Forest Service
WQS – Water Quality Standards 18 AAC 70

Tables of High Priority Waters by Region of the State

Use the Bookmark links to the left of this page to navigate directly to a specific water in this document. Alternatively, you may also scroll through the pages to the water of interest. Note that some of the waters have numerous actions that continue on a second page.

Northern, Interior

Anvil Creek	Kotzebue Lagoon
Chena River	Nome River
Clearwater Creek	Solomon River
Crooked Creek	

South-Central

Anchor River	Eagle River	Little Survival Creek
Big Lake	Fish Creek (Anchorage)	Matanuska River
Bodenburg Creek	Fox River	Ninilchik River
Bridge Creek	Fritz Creek	Seldovia Bay
Campbell Creek	Furrow Creek	Seldovia Bay (Harbor)
Campbell Lake	Halibut Cove	Ship Creek
Chester Creek	Homer Harbor	Slikok Creek
Cooper Creek	Lake Louise	Stariski Creek
Copper River	Lake Lucille	University Lake
Cottonwood Lake	Little Campbell Creek	Willow Creek
Deep Creek	Little Rabbit Creek	

Southeast

Auke Bay	Jordan Creek	Sawmill Creek (Haines)
Auke Creek	Katlina River	Sawmill Creek (Sitka)
Auke Nu Cove	Lemon Creek	Sitka Harbor
Carlanna Creek	Montana Creek (Juneau)	Situk River
Duck Creek	Mosquito Lake	Skagway Harbor
Gunnuk Creek	One Mile Creek	Vanderbilt Creek
Hatchery Creek	Pullen Creek	

Southwest

Cold Bay	Iliuliuk Harbor
Dutch Harbor	Nushagak River

Anchor River - Fiscal Year 2014

Description Lower Kenai Peninsula, confluence with Cook Inlet at Anchor Point

Lat/Long 59.7750000 -151.8583333

Concern: Urbanization 2011-2016

Anchor River is in the Protect and Maintain Waterbodies at Risk Track with water quality and aquatic habitat being primary concerns due to land use activities. Properties located adjacent to or that drain to the Anchor River are being developed by property owners that may not understand the function of riparian habitat and its role in maintaining water quality.

Goal: Protect and maintain water quality 2011-2016

Educate Anchor River property owners in ways to minimize their impacts on riparian habitat to promote water quality and sustain the fish and wildlife that depend on it.

Action a: Conduct education and outreach 2011-2016

Working with DEC, ADF&G, and other stakeholders develop and provide educational material to Anchor River property owners on ways they can minimize impacts on the Anchor River when developing and maintaining their property. Existing or new education material should be cost effective and shall be distributed to all Anchor River property owners. Educational material should focus on ways property owners can minimize impervious surfaces, reduce stormwater run-off, and promote healthy riparian habitat. Material should contain contact information for agencies and organizations that can assist property owners wishing to implement recommendations made in the educational material.

Anvil Creek - Fiscal Year 2014**Description** Nome**Lat/Long** 64.5286440 -165.4931550**Concern: Habitat degradation 2006-2016**

Anvil Creek is in the Data Collection and Monitoring Track with habitat as the primary concern. The condition of fish habitat is unknown and may have been degraded from past mining practices.

Goal: Determine the existing condition of the water body 2006-2015

A thorough examination and assessment of current habitat condition is needed.

Action a: Collect Data 2006-2015

In collaboration with ADF&G, Federal, local watershed/environmental and/or tribal entities, survey stream and evaluate state of fish habitat. Methods used should follow one or combination of standard methods found in: Bain & Stevenson 1999, U.S Forest Service Aquatic Stream Habitat Survey Manual, ENRI Stream Condition Index or other comparable well-documented methods. Results of actions should identify fish use, describe condition of aquatic and riparian habitat, and identify areas needing restoration or additional protection.

Auke Bay - Fiscal Year 2014**Description** Juneau**Lat/Long** 58.3680000 -134.6780000**Concern: Habitat degradation 2013-2016**

Auke Bay is in the Protect and Maintain Waterbodies at Risk Track with water quality and habitat being primary concerns. The water is currently designated as Category 3 in the 2012 Draft Integrated Report, data or information is insufficient to determine whether the Water Quality Standards (WQS) for any designated uses are attained. Numerous anadromous streams are associated with this bay, including the presence of eel grass beds. Threats to the bay include Municipal and storm sewer point sources, onsite septic systems, underground storage tanks, and non-point source pollutants associated with land use.

Goal: Protect and maintain water quality 2013-2016

Maintain water quality and aquatic habitat through implementing stewardship and protection activities including education and outreach. Coordinate activities with other agencies and organizations working in the watershed as much as possible.

Action a: Collaboration 2013-2016

Collaborate with stakeholders and agencies to maintain state water quality standards for all uses, with focus on urban runoff, fecal coliform bacteria, temperature, and conductivity.

Action b: Conduct education and outreach 2013-2016

This action should be conducted throughout the Juneau Auke watershed, and include Auke Bay, Auke Lake, Auke Creek, and Auke Nu Cove. In collaboration with resource agencies and other stakeholders, design and implement an educational program aimed at watershed residents, businesses, and users, which addresses actions they can do to reduce non-point source pollution related to debris, snow removal, road runoff, and the application of Best Management Practices (BMPs). This includes community workshops, web-based educational tools, signage, and traditional educational materials. Existing or new educational material will be distributed to property owners adjacent to the waterbody/riparian area. Material should contain information for agencies and organizations that can assist property owners wishing to implement recommendations made in outreach materials. Close coordination with stakeholders and agencies is necessary.

Action c: Implement BMPs or erosion control measures 2013-2016

Apply best management practices (BMPs) and existing regulatory means to reduce non-point source pollutants.

Auke Creek - Fiscal Year 2014**Description** Juneau**Lat/Long** 58.3809740 -134.6421720**Concern: Urbanization 2012-2016**

Auke Creek is in the Protected and Maintain Waterbodies at Risk Track with water quality being a primary concern and aquatic habitat as a secondary concern. Threats to the creek include petroleum hydrocarbons and other pollutants associated with road runoff, on-site septic systems, and construction development on sites less than one acre in size on sites adjacent to the creek.

Goal: Protect and maintain water quality 2012-2016

Use regulatory and best management practices (BMPs) to reduce the amount of pollution generated by non-point sources.

Action a: Implement watershed restoration plan or TMDL 2012-2016

In collaboration with local community members, stakeholders, and local agencies, implement the 2009 Juneau Watershed Partnership (JWP) Auke Lake Watershed Action Plan. The Auke Lake Watershed includes Lake Creek, Lake Two Creek, Auke Lake, and Auke Creek; the watershed discharges into Auke Bay. This action should reference stormwater contaminant and sedimentation sources, non-point source pollution mitigation strategies, and the development of city ordinances to support water quality in the Auke Lake watershed. GIS layers should be produced to complement reporting efforts. Layers should include potential stormwater sources and outfalls, restoration opportunities, risk priority and sensitivity analysis, and other pertinent information relating to non-point source pollution.

Action b: Conduct education and outreach 2012-2016

This action should be conducted throughout the Juneau Auke watershed, and include Auke Bay, Auke Lake, Auke Creek, and Auke Nu Cove. In collaboration with resource agencies and other stakeholders, design and implement an educational program aimed at watershed residents, businesses, and users, which addresses actions they can do to reduce non-point source pollution related to debris, snow removal, road runoff, and the application of Best Management Practices (BMPs). This includes community workshops, web-based educational tools, signage, and traditional educational materials. Existing or new educational material will be distributed to property owners adjacent to the waterbody/riparian area. Material should contain information for agencies and organizations that can assist property owners wishing to implement recommendations made in outreach materials. Close coordination with stakeholders and agencies is necessary.

Auke Nu Cove - Fiscal Year 2014

Description Auke Bay

Lat/Long 58.3805555 -134.6916666

Concern: Habitat degradation 2013-2016

Auke Nu Cove is in the Protect and Maintain Waterbody at Risk Track with aquatic habitat being the primary concern. Auke Nu Cove hosts a small area of eel grass and is of concern to National Marine Fisheries Service (NMFS). Road and parking lot run off associated with Egan Drive, a seafood processing facility, and the Alaska Marine Highway terminal is a concern.

Goal: Reduce pollutant loading and improve water quality 2013-2016

Maintain and improve water quality and aquatic habitat through implementing stewardship and protection activities including education and outreach. Coordinate activities with other agencies and organizations working in the watershed as much as possible.

Action a: Collaboration 2013-2016

Collaborate with stakeholders and agencies to maintain state water quality standards for all uses, with focus on urban runoff, fecal coliform bacteria, temperature, and conductivity.

Action b: Conduct education and outreach 2013-2016

This action should be conducted throughout the Juneau Auke watershed, and include Auke Bay, Auke Lake, Auke Creek, and Auke Nu Cove. In collaboration with resource agencies and other stakeholders, design and implement an educational program aimed at watershed residents, businesses, and users, which addresses actions they can do to reduce non-point source pollution related to debris, snow removal, road runoff, and the application of Best Management Practices (BMPs). This includes community workshops, web-based educational tools, signage, and traditional educational materials. Existing or new educational material will be distributed to property owners adjacent to the waterbody/riparian area. Material should contain information for agencies and organizations that can assist property owners wishing to implement recommendations made in outreach materials. Close coordination with stakeholders and agencies is necessary.

Action c: Implement BMPs or erosion control measures 2013-2016

Apply best management practices (BMPs) and existing regulatory means to reduce non-point source pollutants.

Bear Creek (Hogatza) - Fiscal Year 2014

Description Bear Creek is located on the east side of the Zane Hills at Hogatza in the Yukon-Koyukuk borough.

Lat/Long 66.1606150 -155.5497550

Concern: Sediment 2013-2016

Bear Creek stream is in the Protect and Maintain Waterbodies at Risk Track. Reclamation efforts of past mining practices may not have been adequate to restore habitat and water quality.

Goal: Determine the existing condition of the water body 2013-2016

Ensure that reclamation efforts have been successful.

Action a: Collect Data 2013-2016

Prepare and implement a sampling plan to evaluate the current condition of the waterbody with respect to Alaska Water Quality Standards.

Big Lake - Fiscal Year 2014

Description Big Lake - drains an area of 90 square miles; surface area of 2495 acres; 26 miles of shoreline

Lat/Long 61.5333333 -149.9000000

Concern: Habitat degradation 2013-2015

Big Lake is in the Waterbody Recovery Track with water quality and habitat being concerns. Presence of northern pike degrades productivity of native fishes, particularly sockeye and coho salmon. Other invasive aquatic species such as Canary reed grass or elodea may also be present.

Goal: Protect and maintain in-stream flow and aquatic habitat 2013-2015**Action c: Restore habitat 2013-2015**

Work closely with ADF&G to develop and implement a plan to eradicate/diminish pike population.

Bodenburg Creek - Fiscal Year 2014

Description Groundwater stream flowing into Knik River; supports river-type sockeye salmon

Lat/Long 61.5090610 -149.0309760

Concern: Instream flow protection 2012-2015

Bodenburg Creek is in the Data Collection and Monitoring Track with water quantity being the primary concern. Currently, instream flow protection does not exist.

Goal: Protect and maintain instream flow and aquatic habitat 2012-2015

Use biological, streamflow and other pertinent information to support an application(s) for a reservation of water for one or more of the purposes allowable under the Alaska Water Use Act.

Action a: Collect Data 2012-2015

Following USGS protocols, collect streamflow data to meet the requirements for reservation of water application to protect fish and wildlife habitat, migration, and propagation or for sanitary and water quality purposes. Establish appropriate site and permanent elevation reference marks, and use electronic sensors and data loggers to record continuous water levels; measure discharge to accurately adequately capture flow characteristics at the range of flows during all seasons for developing a stage-discharge relationship (rating). Provide data to ADF&G, DNR, or qualified contractor for analysis. Prior to commencement of field work a project Quality Assurance Project Plan should be developed and approved by DEC and ADF&G or DNR. Data collected should be provided in a format that can be easily transferred to AWQMS (consult with DEC).

Action b: Reservation of water 2012-2015

In consultation with ADF&G and DNR and/or DEC, document, compile, and summarize seasonal fish use and other pertinent biological information throughout the selected portion(s) of the river to be protected. Compile and summarize existing streamflow data and identify geographic and a hydrologically similar study reach (consult with DNR or ADF&G). Use biological, streamflow and other pertinent information to support an application(s) for a reservation of water for one or more of the purposes allowable under the Alaska Water Use Act. Prior to commencement of field work a project QAPP should be developed and approved by DEC and ADF&G or DNR.

Bridge Creek - Fiscal Year 2014

Description Near Homer. Tributary to Twitter Creek and Anchor River

Lat/Long 59.7042520 -151.6203400

Concern: Urbanization 2006-2016

Bridge Creek is on the Protect and Maintain Waterbodies at Risk Track. The City of Homer currently owns and operates a water reservoir within the Bridge Creek watershed. Potential impacts could occur from increase development and recreational use with the watershed, upstream of the reservoir.

Goal: Protect and maintain water quality 2006-2016

Protect and maintain existing water quality so water can continue to be used as a public water source for the City of Homer.

Action a: Develop planning documents 2006-2016

Update watershed planning documents as necessary to address new and existing residential development and recreational uses.

Campbell Creek - Fiscal Year 2014

Description Anchorage. The Campbell Creek watershed is approximately 72 square miles (mi²) and includes drainages for its main tributaries—South Fork Campbell Creek (28.7 mi²), North Fork Campbell Creek (16.5 mi²) and Little Campbell Creek (13.3 mi²).

Lat/Long 61.1379430 -149.9246480

Concern: Enterococci and/or fecal coliform bacteria 2011-2015

Campbell Creek is in the Waterbody Recovery Track with water quality being the primary concern due to fecal coliform bacteria pollution. In 2002/2003 the Department of Environmental Conservation (DEC) listed Campbell Creek on the Clean Water Act Section 303(d) list as impaired waters for fecal coliform bacteria and identified urban runoff as the expected pollutant source. DEC originally listed the waterbody as impaired in 1990, but it was unclear at the time if the entire creek or just the urban portion of the creek was impaired. Sampling conducted in 2005 narrowed the impaired portion of the creek to just the urban area. A TMDL was completed for both Campbell Creek and Campbell Lake in 2006.

Goal: Meet water quality standards and remove impairment status 2011-2015

The goal is to initiate activities and collect data to support removal of Campbell Creek from the State's list of impaired waterbodies.

Action b: Document existing BMPs and assess additional BMP needs 2013-2015

Grantee to work with the Municipality of Anchorage to document best management practices being implemented in this watershed to reduce fecal coliform and other pollutant loading. Grantee to assess the need for additional BMPs based on known fecal coliform source types identified in the 2010 ARRI Fecal Coliform Bacteria Assessment report.

Campbell Lake - Fiscal Year 2014

Description Anchorage, manmade lake, ~125 acres

Lat/Long 61.1320900 -149.9466630

Concern: Enterococci and/or fecal coliform bacteria 2011-2016

Campbell Lake is in the Waterbody Recovery Track with water quality being the primary concern due to fecal coliform bacteria pollution. The State of Alaska included Campbell Lake on its 2002 303(d) list of impaired waters as water quality-limited due to fecal coliform, identifying urban runoff as the expected pollutant source. The Campbell Creek watershed, including Campbell Lake, was first listed as impaired in 1990 but it was unclear at the time if the entire watershed or just the urban portion was impaired. Sampling conducted in 2005 showed the lake and the urban portion of the creek were impaired. A TMDL was completed for both Campbell Lake and Campbell Creek in 2006.

Goal: Meet water quality standards and remove impairment status 2011-2016

The goal is to collect data to support removal of Campbell Lake from the State's list of impaired waterbodies.

Action b: Document existing BMPs and assess additional BMP needs 2014-2016

Work in cooperation with the Municipality of Anchorage to document best management practices being implemented in this watershed to reduce fecal coliform and other pollutant loading. Grantee to assess the need for additional BMPs based on known fecal coliform source types identified in the 2010 ARRI Fecal Coliform Bacteria Assessment report. Generate a report that describes the location and type of BMPs currently implement, ones recommended, the pollutant(s) they are designed to address and a priority ranking for installation or replacement if needed.

Carlanna Creek - Fiscal Year 2014**Description** Ketchikan**Lat/Long** 55.3586490 -131.6950680**Concern: Instream flow protection 2006-2016**

Carlanna Creek is in the Data Collection and Monitoring Track. The creek does not have current streamflow data or instream flow protection, and is a high priority for ADF&G.

Goal: Protect and maintain instream flow and aquatic habitat 2006-2016

File reservation of water for one or more reaches to protect fish and wildlife habitat and/or to protect water quality.

Action b: Collect Data 2006-2016

Following USGS protocols, collect streamflow data to meet the requirements for reservation of water application to protect fish and wildlife habitat, migration, and propagation or for sanitary and water quality purposes.

Action c: Other 2006-2016

In consultation with ADF&G and DNR and/or DEC, document, compile, and summarize seasonal fish use and other pertinent biological information throughout the portion of creek cataloged as anadromous by ADF&G. Compile and summarize existing streamflow data and identify geographic pertinence to establish a hydrologically similar study reach or reaches. Use biological and streamflow information to support an application(s) for a reservation of water for one or more of the allowable purposes.

Chena River - Fiscal Year 2014

Description A tributary to the Tanana River that flows through downtown Fairbanks

Lat/Long 64.8403000 -147.4825000

Concern: Urbanization 2011-2014

Chena River is in the Waterbody Recovery Track, with water quality being the primary concern due to urban run-off pollutants including sediment, petroleum, metals and fecal coliform bacteria.

Goal: Reduce pollutant loading and improve water quality 2013-2014

Protect, maintain, and/or restore shoreline, substrate, and the natural processes that form and support fish habitat. Develop and implement best management practices (BMPs) and foster good stewardship.

Action b: Collect Data 2013-2014

Conduct a preliminary assessment of bio-indicators that address impacts from land use activities that may negatively affect essential fish habitat. Assessment should include documenting physical characteristics, bank condition, biotic communities, and areas of concentrated salmon spawning and rearing. Analyze results; provide conclusions and recommendations for restoration and other management alternatives. Macroinvertebrate assessment must use UAA-ENRI ASCI sampling methods. Information will be used to help prioritize restoration and other activities to improve water quality.

Chester Creek - Fiscal Year 2014

Description Chester Creek watershed is located in south-central Alaska, and is bounded on the east by the Chugach Mountains, on the north by the Ship Creek watershed, and on the south by the Campbell Creek watershed. The basin lies entirely within the Municipality of Anchorage and drains an area of ~30.2 square miles.

Lat/Long 61.2079350 -149.9238970

Concern: Enterococci and/or fecal coliform bacteria 2011-2015

Chester Creek is in the Waterbody Recovery Track due to fecal coliform bacteria pollution. Chester Creek was placed on the Section 303(d) list in 1990 for non-attainment of the fecal coliform bacteria standard. A TMDL for fecal coliform bacteria was developed and approved by EPA (dated May 2005).

Goal: Meet water quality standards and remove impairment status 2011-2015

The goal is to remove Chester Creek from the State's list of impaired waterbodies.

Action a: Document existing BMPs and assess additional BMP needs 2013-2015

Work in cooperation with the Municipality of Anchorage to document best management practices being implemented in this watershed to reduce fecal coliform and other pollutant loading. Grantee to assess the need for additional BMPs based on known fecal coliform source types identified in the 2010 ARRI Fecal Coliform Bacteria Assessment report. Generate a report that describes the location and type of BMPs currently implement, ones recommended, the pollutant(s) they are designed to address, and a priority ranking for installation or replacement if needed.

Concern: Instream flow protection 2012-2015

Chester Creek in the Waterbody Recovery Track and is one of the few salmon-producing streams in the Anchorage area that does not have instream flow protection.

Goal: Protect and maintain in-stream flow and aquatic habitat 2012-2015

Protect instream flows for fish and wildlife habitat, migration and propagation, and/or water quality purposes.

Action c: Reservation of water 2014-2015

In consultation with ADF&G and DNR and/or DEC, use existing biological, streamflow and other pertinent information to support an application(s) for a reservation of water for one or more of the purposes allowable under the Alaska Water Use Act.

Clearwater Creek - Fiscal Year 2014

Description Delta Junction Area. Flows to Tanana River. AKA Delta Clearwater River.

Lat/Long 64.1013060 -145.5444290

Concern: Turbidity 2012-2016

Clearwater Creek is in the Protect and Maintain Waterbodies at Risk Track with water quality and aquatic habitat being the primary concerns. The current watershed plan developed by the Natural Resource Conservation Service (NRCS) needs to be revised, as implementation of the actions identified in that plan increased the risk of turbidity/sediment to the Delta Clearwater River. The negative effects of the current plan are being reversed, however a revised watershed plan is needed.

Goal: Protect and maintain instream flow and aquatic habitat 2012-2016

Protect and maintain water quality and prevent run-off pollution in the Delta Clearwater watershed.

Action a: Implement watershed restoration plan or TMDL 2012-2015

Coordinate with NRCS, DEC and current watershed project partners to develop a watershed plan that follows the EPA watershed planning guidance and utilizes information and research from past planning efforts. The plan will focus on implementing nonpoint source pollution best management practices (BMP's) in areas that threatened the Delta Clearwater Creek.

Cold Bay - Fiscal Year 2014

Description Located near the western end of the Alaska Peninsula, ~0.01 acres impacted by a petroleum seep.

Lat/Long 55.2047370 -162.7088780

Concern: Toxic and Other Deleterious Organic and Inorganic Substances 2012-2015

Cold Bay is in the Waterbody Recovery Track and was placed on the 1998 Section 303(d) list for non-attainment of the petroleum hydrocarbons, oils and grease standard for petroleum products. Historic upland petroleum releases from a formerly used defense (FUD) site have contaminated localized ground water. Contaminated ground water enters Cold Bay through small seeps in the bluffs causing localized exceedances of the petroleum hydrocarbon water quality standards.

Goal: Meet water quality standards and remove impairment status 2012-2015

Reduce the amount of petroleum contaminated ground water reaching Cold Bay to a point where water quality standards are being met.

Action a: Collect Data 2013-2015

Collect water quality data to determine the extent of contamination. The responsible party is conducting ongoing restoration of the contaminated uplands. Restoration activities include: soil excavation and removal, bioventing, and soil vapor extraction. As a result, the contaminated ground water plume may have stabilized and is no longer impacting the waters of Cold Bay. Assessing known areas of contamination (bluff seeps, water column, and beach sediments) may determine Cold Bay is now meeting state petroleum hydrocarbon water quality standards and could be removed from the State's impaired waters list. Sampling must be conducted under a DEC approved Quality Assurance Project Plan (QAPP).

Cooper Creek - Fiscal Year 2014

Description Cooper Creek at Cooper Landing on the Kenai Peninsula

Lat/Long 60.4843950 -149.8798520

Concern: Turbidity 2012-2014

Cooper Creek is in the Protect and Maintain Waterbodies at Risk Track with water quality being the primary concern due to past land use activities. Historic hydraulic placer mining near the confluence with the Kenai River has left a large soil embankment unstable. Each spring and during heavy rain events sections of the embankment slump and erode into Cooper Creek, causing an increase in the sediment load and turbidity levels.

Goal: Restore habitat or improve fish passage 2012-2014

Stabilize a large sloughing embankment to reduce the amount of sediment entering the creek.

Action a: Restore habitat 2012-2014

Develop and implement a plan to stabilize the eroding embankment or capture and stabilize slumping soil to prevent sediment from entering Cooper Creek. The plan should include an educational kiosk, to be installed early in the implementation phase of the project, that explains why the work is being performed and the environmental benefits achieved. The plan will need approval by DNR, DEC, and ADF&G.

Copper River - Fiscal Year 2014

Description enters Gulf of Alaska near Cordova

Lat/Long 60.4636000 -144.8908000

Concern: Habitat degradation 2013-2016

Copper River is in the Data Collection and Monitoring Track with population growth, mineral and other resource development posing a persistent threat.

Goal: Protect and maintain in-stream flow and aquatic habitat 2013-2016

While instream flow is protected on two reaches, unprotected segments in the upper river remain. Little is known about fish habitat use in this large glacial river.

Action a: Collect Data 2013-2016

Baseline monitoring and assessment of habitat use by important salmon and resident species is needed.

Cottonwood Lake - Fiscal Year 2014

Description in Wasilla, flows into Wasilla Lake via Cottonwood Creek

Lat/Long 61.5978000 -149.3161000

Concern: Urbanization 2006-2016

Urban growth has the potential to degrade water quality and habitat.

Goal: Maintain Water Quality to Meet Designated Uses 2006-2016

including shoreline, fisheries, and aquatic habitat protection

Action a: Conduct education and outreach 2006-2016

Working with DEC, ADF&G, and other stakeholders develop and provide educational material property owners on ways they can minimize impacts when developing and maintaining their property. Existing or new education material should be cost effective and distributed to all shoreline and surrounding area property owners. Educational material should focus on ways property owners can minimize impervious surfaces, reduce stormwater run-off, and promote healthy riparian habitat. Material should contain contact information for agencies and organizations that can assist (e.g cost share programs) property owners wishing to implement recommendations made in the educational material.

Crooked Creek - Fiscal Year 2014

Description Tributary of Birch Creek, near Central, AK.

Lat/Long 65.6279380 -144.4434790

Concern: Turbidity 2011-2016

Crooked Creek is in the Data Collection and Monitoring Track with water quality being the primary concern due to turbidity associated with placer mining activities. In 1992 the Department of Environmental Conservation (DEC) listed Crooked Creek watershed on the Clean Water Act Section 303(d) list of impaired waters for non-attainment of the turbidity standards. A water quality assessment was completed in August 1995 (Crooked Creek Water Quality Assessment, USGS, 1995).

Goal: Maintain Water Quality to Meet Designated Uses 2013-2015

Maintain state water quality standards (WQS) for all uses - focus on sediment, turbidity, and biological measurements including habitat.

Action a: Conduct education and outreach 2014-2015

The grantee will design and implement an outreach and education campaign. The audience is placer miners operating in the Crooked Creek and nearby watersheds. The focus of the campaign is on water quality standards for turbidity and the effects of increased turbidity and sediment on fish. Education must also include how to measure turbidity, including use of instruments and correct record keeping and quality assurance.

Deep Creek - Fiscal Year 2014

Description Lower Kenai Peninsula

Lat/Long 60.0333333 -151.7000000

Concern: Urbanization 2011-2015

Deep Creek is in the Protect and Maintain Waterbodies at Risk Track with water quality being the primary concern due to land use activities. Properties located adjacent to, or that drain to Deep Creek, are being developed by property owners that may not understand the function of riparian habitat and its role in maintaining water quality.

Goal: Protect and maintain water quality 2011-2015

Educate Deep Creek property owners in ways to minimize their impacts on riparian habitat to promote water quality and sustain the fish and wildlife that depend on it.

Action a: Conduct education and outreach 2011-2015

Working with DEC, ADF&G, and other stakeholders develop and provide educational material to Deep Creek property owners on ways they can minimize impacts on Deep Creek when developing and maintaining their property. Existing or new education material should be cost effective and shall be distributed to all Deep Creek property owners. Educational material should focus on ways property owners can minimize impervious surfaces, reduce stormwater run-off, and promote healthy riparian habitat. Material should contain contact information for agencies and organizations that can assist property owners wishing to implement recommendations made in the educational material.

Concern: Instream flow protection 2012-2015

Deep Creek is in the Protect and Maintain Waterbodies at Risk Track. Currently, Deep Creek has no instream-flow protection and is a high priority for ADF&G.

Goal: Protect and maintain in-stream flow and aquatic habitat 2012-2015

File reservation of water for one or more reaches to protect fish and wildlife habitat and/or to protect water quality.

Action b: Collect Data 2012-2015

In consultation with ADF&G and DNR, collect streamflow data to meet the requirements for reservation of water application to protect fish and wildlife habitat, migration, and propagation or for sanitary and water quality purposes. Typically, DNR requires 5 years of stream flow data to support a reservation of water.

Action c: Reservation of water 2013-2015

In consultation with ADF&G and DNR, compile biological, streamflow and other pertinent information to support an application(s) for a reservation of water according to procedures and regulations of the Alaska Water Use Act.

Deshka River (Kroto Creek) - Fiscal Year 2014

Description Western tributary to the Susitna River approximately 9 miles west of Willow

Lat/Long 61.6992530 -150.3197050

Concern: Toxic and Other Deleterious Organic and Inorganic Substances 2012-2015

Deshka River is in the Protect and Maintain Track with water quality and aquatic habitat being primary concerns. The Deshka River receives intensive motorized boat use (especially the lower 3 miles) during summer fisheries. The river also serves as a transportation corridor for boats traveling to cabins or other nearby rivers. Impacts from these activities to water quality and aquatic habitat are unknown but of concern for maintaining healthy water quality and aquatic habitat.

Goal: Determine the existing condition of the water body 2012-2015

Determine if the Deshka River meets water quality standards (WQS) for petroleum hydrocarbons (total aromatic hydrocarbons and total aqueous hydrocarbons).

Action a: Collect Data 2012-2015

The grantee will develop a Sample Plan and Quality Assurance Project Plan (QAPP) which must be approved by DEC. The grantee will then collect water samples monitoring for petroleum hydrocarbons in the lower 3-5 river miles (where fishing activities concentrate). Monitoring sites must be located to determine the presence and the longitudinal extent of the hydrocarbons. Sampling should be conducted during heavy-use period(s) typically during the first three weeks in June and the first three weeks in August. Sampling must be designed to determine whether WQS are being exceeded. If year 1 sample results exceed WQS, a second year of sampling may occur. The second year of sampling must include a 96-hour sample event with a minimum of 20 samples collected throughout that time period and the sample results averaged. The sampling periods must focus on motorized heavy-use periods.

Both sampling years must also include data collection for: number of motorized boats, 2 stroke versus 4 stroke motors, and horsepower in order to determine hydrocarbon loading. The grantee may collect other water quality parameters including: flow, pH, dissolved oxygen, temperature, conductivity, turbidity grab samples, and recreational impact analysis (undercut banks, bank erosion, etc.). The grantee will analyze all samples, evaluate results and prepare a draft and final report of findings, conclusions and recommendations.

The grantee is responsible to either directly enter their project data into the Environmental Protection Agency's (EPA) water quality database (STORET) or ensure data collected is provided in a format that can be easily transferred to DEC's water quality database (AWQMS). DEC will provide the grantee with the data templates and guidance on how to use the templates for this project. The grantee should budget time to become proficient in the use of the reporting data template.

Concern: Turbidity 2012-2015

Deshka River is in the Protect and Maintain Track with water quality and aquatic habitat being primary concerns. The Deshka River receives intensive motorized boat use (especially the lower 3 miles) during summer fisheries. The river also serves as a transportation corridor for boats traveling to cabins or other nearby rivers. Impacts from these activities to water quality and aquatic habitat are unknown but of concern for maintaining healthy water quality and aquatic habitat.

Goal: Determine the existing condition of the water body 2012-2015

Determine if the Deshka River continues to meet water quality standards for turbidity.

Action b: Collect Data 2012-2015

Following a DEC approved Sample Plan and Quality Assurance Project Plan (QAPP), collect turbidity data in the lower Deshka River during open water months. Monitoring must include determining natural conditions, turbidity associated with erodible stream banks and recreational activities. Water quality data should be collected using data loggers to capture data on a continuous basis over a several month period. In addition to continuous data collection, grab samples will also be collected for comparison and river transect data should be conducted to determine variability between near bank and mid river. The data must be analyzed, organized and submitted to DEC in a draft and final report.

The grantee is responsible to either directly enter their project data into STORET or ensure data collected is provided in a format that can be easily transferred to AWQMS. DEC will provide the grantee with the data reporting templates and guidance on how to use the templates for this project. Grantees should budget time to become proficient in the use of the data reporting template.

Duck Creek - Fiscal Year 2014**Description** Juneau**Lat/Long** 58.3592000 -134.5978000**Concern: Urbanization 2013-2016**

Duck Creek is in the Waterbody Recovery Track with water quality and aquatic habitat being primary concerns. Duck Creek was placed on the 1994 Section 303(d) listed for dissolved gas (low DO), residues (debris), metals, FC bacteria, and turbidity. TMDLs were completed for all pollutants (turbidity in 1999, FC bacteria and residues in 2000, and DO and iron in 2001), and Duck Creek moved to Category 4a in 2002/2003. Priority actions identified for this water include implementing the Duck Creek Management Plan and actions to address loadings identified in TMDLs; conducting monitoring program to determine whether recovery actions are improving water quality; maintaining stream flow to provide fish rearing habitat in the stream, dilute pollutants, and prevent salt water intrusion; and working with the City and Borough of Juneau and others to ensure adequate stormwater permitting practices and controls are implemented to restore water quality. According to the 2006 final monitoring report ("Watershed Protection and Recovery for Duck Creek, Juneau, AK Project #: ACWA-06-09," Nagorski, Hood, Hoferkamp, July 2006), Duck Creek continued to suffer from low in-stream flow, except for during large precipitation events; DO levels continued to regularly fall below state standards for aquatic life; pH values were centered near and at times below the state water quality standard of 6.5 for aquatic life (during morning sampling events); and large amounts of iron floc were noted at all sites. Stream cleanup events are typically conducted on a biennial basis to address ongoing residues (debris) issues in high-density corridors. The construction of wetland habitat and channelization of the stream above Nancy Street have produced some improvement to fish and wildlife habitat, reduced turbidity and iron levels, and raised pH and DO in the downstream reach. However, ongoing land use, ordinance enforcement, and snow disposal on private lands adjacent to Duck Creek continue to impair water quality.

Goal: Meet water quality standards and remove impairment status 2013-2016

Protect and maintain water quality to meet all designated uses and remove impairment status. All new and existing development in the watershed should be managed according to the Duck Creek TMDL loading analysis and allocations and the best management practices (BMPs) outlined. Work with new and existing development to ensure that BMPs are being implemented.

Action b: Conduct education and outreach 2013-2016

This action should be conducted throughout the Juneau watersheds, and include Duck Creek, Jordan Creek, Vanderbilt Creek, Lemon Creek, and Pederson Hill Creek. In collaboration with resource agencies and other stakeholders, design and implement an educational program aimed at watershed residents, businesses, and users, which addresses actions they can do to reduce non-point source pollution related to debris, snow removal, road runoff, and the application of Best Management Practices (BMPs). This includes community workshops, web-based educational tools, signage, and traditional educational materials. Existing or new educational material will be distributed to property owners adjacent to the waterbody/riparian area. Material should contain information for agencies and organizations that can assist property owners wishing to implement recommendations made in outreach materials. The JWP has conducted several events on these creeks through the ACWA program including a recovery and water quality monitoring plan and stream clean-up activities. Expansion of these efforts and integration of recently developed CBJ BMPs and ordinance is needed.

Action c: Implement watershed restoration plan or TMDL 2013-2016

This project should be combined with Jordan and Vanderbilt Creek projects. Use remote sensing technology (i.e., motion detection cameras) to document potential sources of illegal debris activity (dumping). Document current debris conditions against historic amounts noted during the development of the Total Maximum Daily Load for Debris. Conduct public education. The education should include information about the scope of the project, rationale and project results. The results will be used to assess whether debris/residue management efforts are leading to water quality improvements through existing means such that Duck, Jordan, and Vanderbilt Creek TMDLs for Debris/Residue may be removed. Results may also be used to enhance local ordinances.

Dutch Harbor - Fiscal Year 2014**Description** Unalaska, Aleutian chain**Lat/Long** 53.8992400 -166.5250200**Concern: Toxic and Other Deleterious Organic and Inorganic Substances 2012-2016**

Dutch Harbor is in the Waterbody Recovery Track with water quality and aquatic habitat being the primary concern. In 1994, the Department of Environmental Conservation (DEC) listed Dutch Harbor on the Clean Water Act Section 303(d) list as an impaired waterbody for petroleum hydrocarbons. Monitoring conducted by DEC in 2007–2008 found that Dutch Harbor remains impaired for petroleum, specifically polycyclic aromatic hydrocarbons (PAH), due to oil sheens on bottom sediments. Surface water quality in Dutch Harbor currently meets applicable water quality criteria for petroleum hydrocarbon concentrations. In 2010, EPA approved a total maximum daily load (TMDL) that addresses PAHs in bottom sediments. PAHs may be causing deleterious effects to aquatic life. Sediment contamination is thought to be primarily the result of historic spills and releases on the uplands and on water, which have been spread throughout the area by rain, wind, and tidal and wave action. Current activities at docks and harbors may be adding to the historic pollution.

Goal: Implement actions specified in TMDL 2012-2016

The petroleum hydrocarbon TMDL developed for Dutch Harbor outlined several implementation actions to help reduce additional hydrocarbon pollution to the harbor. This goal applies to Iliuliuk Harbor as well.

Action a: Collaboration 2012-2016

THIS ACTION IS A HIGH PRIORITY. The grantee will convene a group of stakeholders to develop uniform best management practices for docks and harbors given that the most elevated concentrations of PAHs in sediments occur at docks. The group should include private enterprises that would be directly affected, tribal organizations, interested non-government organizations, and local, state, and federal government agencies that have a presence in Iliuliuk and Dutch Harbors. This action must include similar work on Iliuliuk Harbor.

Action b: Implement watershed restoration plan or TMDL 2012-2016

The grantee will encourage, through phone calls, brochures, and other outreach avenues, the City of Unalaska to participate in the Alaska Clean Harbors program. If interest is shown, the grantee will assist the City with the certification process.

Eagle River - Fiscal Year 2014**Description** Eagle River**Lat/Long** 61.3286111 -149.7386111**Concern: Toxic and Other Deleterious Organic and Inorganic Substances 2006-2016**

Eagle River is on the Waterbody Recovery Track for non compliance with the toxics and other deleterious organic and inorganic substances water quality criteria for fresh water designated uses. In February 1995 a TMDL was completed for Eagle River based on pollutant concentrations in the Anchorage Waste Water Utility treatment facility effluent. The contaminants of concern are: copper, lead, silver, chlorine, and ammonia. An APDES permit regulates the discharge of pollutants to Eagle River from the waste water treatment facility.

Goal: Meet water quality standards and remove impairment status 2006-2016

Determine if the Eagle River Anchorage Waste Water Utility facility is meeting effluent limits established in the facility's APDES permit and determine if the facility's effluent is negatively impacting water quality in Eagle River.

Action a: Implement watershed restoration plan or TMDL 2006-2016

Conduct a data analysis of historic and current effluent and ambient water quality data provide to DEC by the Eagle River waste water facility. Evaluate data for data gaps to support removal of the impaired water status. Collect additional data as needed or required by the APDES permit to support the impairment de-listing.

Fish Creek (Anchorage) - Fiscal Year 2014

Description Anchorage, south of Chester Creek

Lat/Long 61.2057800 -149.9327160

Concern: Enterococci and/or fecal coliform bacteria 2011-2015

Fish Creek is in the Waterbody Recovery Track with water quality being the primary concern due to fecal coliform bacteria pollution. Fish Creek was listed on the Section 303(d) list since 1990 for non-attainment of the fecal coliform bacteria standard and the turbidity standard. A 1995 waterbody assessment concluded Fish Creek was impaired only for fecal coliform bacteria. A TMDL for fecal coliform bacteria was developed and approved by EPA in March 2004.

Goal: Meet water quality standards and remove impairment status 2011-2015

Collect data and information to support removal of Fish Creek from the State's list of impaired waterbodies.

Action a: Document existing BMPs and assess additional BMP needs 2013-2015

Work in cooperation with the Municipality of Anchorage to document best management practices being implemented in this watershed to reduce fecal coliform and other pollutant loading. Grantee to assess the need for additional BMPs based on known fecal coliform source types identified in the 2010 ARRI Fecal Coliform Bacteria Assessment report. Generate a report that describes the location and type of BMPs currently implement, ones recommended, the pollutant(s) they are designed to address, and a priority ranking for installation or replacement if needed.

Fox River - Fiscal Year 2014

Description Homer

Lat/Long 59.7914370 -151.0536430

Concern: Habitat degradation 2006-2016

Fox River is on the Protect and Maintain Waterbodies at Risk Track due to habitat degradation caused by domestic animals and recreational activities.

Goal: Protect and maintain instream flow and aquatic habitat 2006-2016

Protect stream bank habitat from intensive use by live stock and All Terrain Vehicle (ATV) crossings.

Action a: Conduct education and outreach 2006-2016

Work with ranchers and recreation groups to minimize stream bank habitat destruction by live stock trampling and ATV users.

Fritz Creek - Fiscal Year 2014

Description Homer

Lat/Long 59.6819980 -151.3726330

Concern: Urbanization 2011-2015

Fritz Creek is in the Protect and Maintain Waterbodies at Risk Track with water quality being a primary concern due to land use activities. Fritz Creek is identified as a potential future public water source for the City of Homer.

Goal: Protect and maintain water quality 2011-2015

Protect existing water quality to ensure water can be used as drinking water for the City of Homer and other communities in the future.

Action a: Develop planning documents 2011-2015

Working with City of Homer and local stakeholders develop a Waterbody Action Plan for Fritz Creek. The plan would review existing water quality information, conduct a habitat assessment, and include action steps to educate watershed land owners on the need to protect water quality for use a future public water source for the City of Homer and surrounding communities.

Furrow Creek - Fiscal Year 2014

Description South Anchorage, Turnagain Arm confluence, headwaters near Elmore Road. Flows through John's Park

Lat/Long 61.1042730 -149.8899080

Concern: Enterococci and/or fecal coliform bacteria 2011-2016

Furrow Creek is in the Waterbody Recovery Track with water quality being the primary concern due to fecal coliform bacteria pollution. Furrow Creek was placed on the 1990 Section 303(d) list for non-attainment of the fecal coliform bacteria standard. A TMDL for fecal coliform bacteria was developed and approved by EPA in March 2004.

Goal: Meet water quality standards and remove impairment status 2011-2016

Collect data to support removal of Furrow Creek from the State's list of impaired waterbodies.

Action a: Document existing BMPs and assess additional BMP needs 2013-2016

Work in cooperation with the Municipality of Anchorage to document best management practices being implemented in this watershed to reduce fecal coliform and other pollutant loading. Grantee to assess the need for additional BMPs based on known fecal coliform source types identified in the 2010 ARRI Fecal Coliform Bacteria Assessment report. Generate a report that describes the location and type of BMPs currently implement, ones recommended, the pollutant(s) they are designed to address and a priority ranking for installation or replacement if needed.

Gunnuk Creek - Fiscal Year 2014**Description** Kake**Lat/Long** 56.9694444 -133.9319444**Concern: Sediment 2006-2016**

Gunnuk Creek is in the Data Collection and Monitoring Track with water quality (siltation/sedimentation) being the primary concern. The water is currently listed in the Draft 2012 Integrated Report in Category 3 - data or information is insufficient to determine whether the Water Quality Standards (WQS) for any designated uses are attained.

Goal: Determine the existing condition of the water body 2006-2016**Action a: Collect Data 2006-2016**

Prepare and implement a sampling plan to evaluate the current condition of the waterbody with respect to Alaska Water Quality Standards.

Halibut Cove - Fiscal Year 2014

Description Southcentral

Lat/Long 59.5990000 -151.1860000

Concern: Enterococci and/or fecal coliform bacteria 2006-2016

Halibut Cove is in the Data Collection and Monitoring Track because of a concern for pollution from onsite septic systems.

Goal: Protect and maintain water quality 2006-2016

Protect water quality and existing designated uses.

Action a: Collect Data 2006-2016

Using a DEC approved Quality Assurance Project Plan (QAPP), conduct bacteria monitoring from discrete sampling locations to determine if designated uses are being impacted. Sampling should be done four times a month between May and September.

Hatchery Creek - Fiscal Year 2014

Description Southeast

Lat/Long 55.9411111 -132.9708333

Concern: Debris 2006-2016

Hatchery Creek is in the Data Collection and Monitoring Track with water quality (residues: debris, foam and scum) being the primary concern. The water is currently listed in the Draft 2012 Integrated Report in Category 3 - data or information is insufficient to determine whether the Water Quality Standards (WQS) for any designated uses are attained.

Goal: Determine the existing condition of the water body 2006-2016**Action a: Collect Data 2006-2016**

Prepare and implement a sampling plan to evaluate the current condition of the waterbody with respect to Alaska Water Quality Standards.

Homer Harbor - Fiscal Year 2014

Description Homer, Homer Spit

Lat/Long 59.6027777 -151.4188888

Concern: Toxic and Other Deleterious Organic and Inorganic Substances 2006-2016

Homer Harbor is in the Data Collection and Monitoring Track with discharges from boats and non point source discharges from upland portions of the harbor property the primary concern.

Goal: Maintain Water Quality to Meet Designated Uses 2006-2016

Work with the Harbor Master to maintain the harbor's Clean Harbors Certification and make other improvements as funding becomes available.

Action a: Conduct education and outreach 2006-2016

Continue to work with the Harbor Master to maintain existing BMPs and look for opportunities to implement other BMPs that would help protect water quality.

Iliuliuk Harbor - Fiscal Year 2014

Description located in Dutch Harbor, Unalaska

Lat/Long 53.8773530 -166.5533350

Concern: Toxic and Other Deleterious Organic and Inorganic Substances 2012-2016

Iliuliuk Harbor is in the Waterbody Recovery Track with water quality and aquatic habitat being the primary concern. Iliuliuk Harbor was listed as an impaired waterbody for petroleum hydrocarbons in 1990. Monitoring conducted by the DEC in 2007–2008 found that Iliuliuk Harbor remains impaired for petroleum, specifically polycyclic aromatic hydrocarbons (PAH), due to oil sheens on bottom sediments. Surface water quality in Iliuliuk Harbor currently meets applicable water quality criteria for petroleum hydrocarbon concentrations. A TMDL was approved in 2010 that addresses PAHs in bottom sediments. PAHs may be causing deleterious effects to aquatic life. Sediment contamination is thought to be primarily the result of historic spills and releases on the uplands and on water, which have been spread throughout the area by rain, wind, and tidal and wave action. Current activities at docks and harbors may be adding to the historic pollution.

Goal: Implement actions specified in TMDL 2012-2016

The petroleum hydrocarbon TMDL developed for Iliuliuk Harbor outlined several implementation actions to help reduce additional hydrocarbon pollution to the harbor.

Action a: Collaboration 2012-2016

THIS IS A HIGH PRIORITY ACTION. The grantee will convene a group of stakeholders to develop uniform best management practices for docks and harbors given that the most elevated concentrations of PAHs in sediments occur at docks. The group should include private enterprises that would be directly affected, tribal organizations, interested non-government organizations, and local, state, and federal government agencies that have a presence in Iliuliuk and Dutch Harbors. This action must include similar work on Dutch Harbor.

Action b: Implement watershed restoration plan or TMDL 2012-2016

The grantee will encourage, through phone calls, brochures, and other outreach avenues, the City of Unalaska to participate in the Alaska Clean Harbors program. If interest is shown, the grantee will assist the City with the certification process.

Jordan Creek - Fiscal Year 2014**Description** Juneau**Lat/Long** 58.3569444 -134.5694444**Concern: Urbanization 2013-2016**

Jordan Creek is in the Waterbody Recovery Track with water quality and aquatic habitat being primary concerns. Jordan Creek was placed on the 1998 Section 303(d) list for debris, dissolved gas (low DO), and sediment. A TMDL (dated May 2005) was developed and approved by EPA for residues on Jordan Creek. A second TMDL was approved by EPA for dissolved gas and sediment in October 2009. Since a TMDL was developed and approved for residues, dissolved gas, and sediment, Jordan Creek was removed from the Section 303(d) and moved to Category 4a for residues. Populations of coho salmon have dropped from an average of 250 adult returns to 54 in 1996 and 18 in 1997. Jordan Creek had been one of the most productive small streams in Juneau and Southeast Alaska for coho salmon, but has experienced a rapid decline. There are serious sediment problems in the stream, leading to poor survival of salmon eggs and low oxygen readings in the substrate that are in violation of WQS. The stream is largely spring fed and cannot transport large volumes of sediment like higher gradient systems. The headwaters of the stream are manipulated with ditches replacing more productive habitat and ponds that have been filled in. More recent observations note a problem with iron floc that was not present 10 years ago; however, no hard iron data that might document iron exceedances are available. The stream corridor is under rapid development, and the lower section of the creek regularly goes dry. Macroinvertebrate bioassessment sampling shows the stream has low diversity and experienced declines during the 1994 to 1996 period. A suite of water quality parameters and pollutants, including sediment, pH, DO, and turbidity, were sampled between November 2007 and June 2008. Findings are summarized in the report Watershed Protection and Recovery for Jordan Creek, Juneau, Alaska (July 2008). Biennial "Slash the Trash" cleanup events and two 2009 Stormwater BMP demonstration sites in 2009 adjacent to stream provide information/education to general public.

Goal: Implement actions specified in TMDL 2013-2016

Protect and maintain water quality to meet all designated uses and remove impairment status. All new and existing development in the watershed should be managed according to the 2006 Jordan Creek Watershed Recovery and Management Plan and the TMDL loading analysis. All new and existing development should ensure that BMPs are being implemented.

Action b: Conduct education and outreach 2013-2016

This action should be conducted throughout the Juneau watersheds, and include Duck Creek, Jordan Creek, Vanderbilt Creek, Lemon Creek, and Pederson Hill Creek. In collaboration with resource agencies and other stakeholders, design and implement an educational program aimed at watershed residents, businesses, and users, which addresses actions they can do to reduce non-point source pollution related to debris, snow removal, road runoff, and the application of Best Management Practices (BMPs). This includes community workshops, web-based educational tools, signage, and traditional educational materials. Existing or new educational material will be distributed to property owners adjacent to the waterbody/riparian area. Material should contain information for agencies and organizations that can assist property owners wishing to implement recommendations made in outreach materials. The JWP has conducted several events on these creeks through the ACWA program including a recovery and water quality monitoring plan and stream clean-up activities. Expansion of these efforts and integration of recently developed CBJ BMPs and ordinance is needed.

Action c: Implement BMPs or erosion control measures 2013-2016

This action should be combined with the Duck Creek and Vanderbilt Creek projects. Use remote sensing technology (i.e., motion detection cameras) to document potential sources of illegal debris activity (dumping). Document current debris conditions against historic amounts noted during the development of the Total Maximum Daily Load (TMDL) for Debris. Compare results as to whether debris/residue management efforts are leading to water quality improvements through existing means such that TMDLs for Debris/Residue may be removed. Results may also be used to enhance local ordinances.

Katlian River - Fiscal Year 2014**Description** Southeast, North of Sitka**Lat/Long** 57.1708333 -135.2750000**Concern: Turbidity 2012-2016**

Katlian River is in the Waterbody Recovery Track with water quality and aquatic habitat being primary concerns. Threats to the stream include sedimentation and turbidity associated with land use. Katlian River was Section 303(d) listed as impaired in 1998 for non-attainment of the sediment and turbidity standards. Past land use activities have created a number of concerns for water quality, and fish habitat. The harvest of riparian timber and location and lack of maintenance of the road system created the following concerns: decreased channel stability, landslides and small slope failures, increased sediment levels, loss of aquatic habitat, siltation of holding pools for migrating salmon, and alteration of watershed hydrology. Watershed effects resulted in use impairment for aquatic life.

Goal: Meet water quality standards and remove impairment status 2012-2016

Maintain state water quality standards for all uses. Focus on sediment, turbidity, and habitat measurements including macroinvertebrates. Determine priority restoration needs.

Action a: Collect Data 2012-2016

Conduct monitoring and environmental audits to determine the effectiveness of BMPs. Add, analyze and evaluate results in relation to existing turbidity data and sediment load reduction calculations. Coordinate with DEC as needed. Sample analysis must be cost effective and comply with State standards. All data collected for this project should be added to existing database for updating models and analysis. Monitoring site selection must include reference site and should consider past sampling sites as potential sampling locations. If the assessment indicates that the water body was erroneously listed, the water body should be moved to Category 2. If water quality or habitat impairments are identified, restoration plans to establish pollution control requirements should be developed. It is anticipated that this waterbody will be moved to either Category 4b or Category 2 based on the findings.

Kotzebue Lagoon - Fiscal Year 2014

Description Northwest tip of the Baldwin Peninsula. Includes Kotzebue Lagoon and the city shoreline along Kotzebue Sound.

Lat/Long 66.8750000 -162.6166666

Concern: Toxic and Other Deleterious Organic and Inorganic Substances 2012-2016

Kotzebue Lagoon is in the Data Collection and Monitoring Track with petroleum hydrocarbons being the primary concern. Petroleum hydrocarbons exceeding contaminated sites clean-up levels have been observed in pore water.

Goal: Determine the existing condition of the water body 2013-2016**Action a: Collect Data 2013-2016**

Prepare and implement a sampling plan to evaluate the current condition of the waterbody with respect to Alaska Water Quality Standards. Coordinate with the DEC's Contaminated Sites Program to evaluate extent of contamination.

Lake Louise - Fiscal Year 2014

Description Approx. 20 miles off Glenn Hwy before Glennallen (at mile 159.8). South end of lake has Lake Louise State Recreation Area. Surface acres: 16,102; Shoreline: 22 miles; Max. depth: 155'.

Lat/Long 61.5750350 -149.4757750

Concern: Urbanization 2011-2016

Lake Louise is in the Data Collection and Monitoring Track, with water quality being a primary concern. The lake serves as the primary drinking water source for residents and there are regulated public drinking water systems on the lake. Limited water quality data exists for the lake; most available data is focused on nutrients.

Goal: Protect and maintain water quality 2014-2016

Implement best management practices designed to protect water quality and reduce runoff pollution to the lake.

Action a: Collaboration 2014-2016

Develop and implement an education campaign for lakeshore residents, businesses and lake users on ways to prevent water pollution and maintain healthy water quality. Topics include clean boating and airplane maintenance Best Management Practices (BMPs), vegetative buffers, waste disposal, stormwater runoff, and other lakeshore development BMPs. This action could include developing a lake management plan through the Matanuska-Susitna Borough that addresses these issues along with other issues typically included in the borough lake management plans.

Action b: Collect Data 2014-2016

Prepare and implement a sampling plan to evaluate the current condition of the waterbody with respect to Alaska Water Quality Standards.

Lake Lucille - Fiscal Year 2014

Description Wasilla, Alaska; Surface acres: 362; Shoreline miles: 4.3

Lat/Long 61.5147000 -149.4714000

Concern: Urbanization 2012-2015

Lake Lucille is in the Waterbody Recovery Track with water quality being a primary concern. In 1994 the Department of Environmental Conservation (DEC) listed Lake Lucille on the Clean Water Act Section 303(d) list as impaired for low dissolved oxygen and nutrients. In 2002, a total maximum daily load (TMDL) was completed. Increased phosphorus loading has led to a reduction in dissolved oxygen. Additionally, there is documented seasonal and localized petroleum water quality standard exceedance from recreational uses of the lake near the public boat launch.

Lake Lucille is a receiving water for the City of Wasilla's stormwater drainage system. Stormwater quality studies conducted by DEC in 2011 - 2013 indicate metals pollution in the sediment above recommended levels for aquatic life at the east and west stormwater outfalls.

Goal: Meet water quality standards and remove impairment status 2012-2015

Meet water quality standards for dissolved oxygen and petroleum hydrocarbons year round. Be able to document recovery of Lake Lucille's water quality and move to Category 2 (attaining uses). Develop and continue implementing pollution prevention controls within watershed.

Action a: Develop planning documents 2012-2015

THIS ACTION IS A HIGH PRIORITY. The grantee will develop plans to reduce the amount of metals being discharged through the stormwater outfall into Lake Lucille. The main source for the metals in the stormwater is likely vehicle brake linings and exhaust washed from the highway and roads. The grantee will develop an enforceable long-term plan that addresses stormwater management practices to reduce the amount of stormwater discharged to the lake as well as implement management practices to improve the stormwater quality (e.g., fewer pollutants). This action must demonstrate local government support.

Lemon Creek - Fiscal Year 2014**Description** Juneau**Lat/Long** 58.3511000 -134.5072000**Concern: Turbidity 2012-2016**

Lemon Creek is in the Waterbody Recovery Track, with water quality and aquatic habitat being primary concerns. Lemon Creek was placed on the 1990 Section 303(d) list for turbidity, sediment, and concerns about habitat modification. A waterbody recovery plan that included a TMDL was prepared and approved for this waterbody in fall 1995, and Lemon Creek moved to Category 4a in 1996. Waterbody recovery plan implementation began during fall 1995. The University of Alaska Southeast conducted a sediment assessment. This assessment defined concentrations of natural nonpoint source sediment within Lemon Creek, where active glacial processes contribute to sediment problems. A paired watershed study was conducted from May 2002 through June 2003 to ascertain the roles of glacier processes on watershed sediment discharge. This study concluded that in systems substantially influenced by glacier and mass wasting processes, the traditional TSS-Q (total suspended sediment-stream discharge) relationship is not particularly meaningful because some of the most pronounced sediment events are associated with processes that are not well correlated with stream discharge. Results of this project will also assist with flood control and bank stabilization projects proposed for Lemon Creek. Priority actions for this water include implementing control actions and monitoring as recommended in the TMDL document.

Goal: Meet water quality standards and remove impairment status 2012-2016**Action b: Conduct education and outreach 2012-2016**

This action should be conducted throughout the Juneau watersheds, and include Duck Creek, Jordan Creek, Vanderbilt Creek, Lemon Creek, and Pederson Hill Creek. In collaboration with resource agencies and other stakeholders, design and implement an educational program aimed at watershed residents, businesses, and users, which addresses actions they can do to reduce non-point source pollution related to debris, snow removal, road runoff, and the application of Best Management Practices (BMPs). This includes community workshops, web-based educational tools, signage, and traditional educational materials. Existing or new educational material will be distributed to property owners adjacent to the waterbody/riparian area. Material should contain information for agencies and organizations that can assist property owners wishing to implement recommendations made in outreach materials. The JWP has conducted several events on these creeks through the ACWA program including a recovery and water quality monitoring plan and stream clean-up activities. Expansion of these efforts and integration of recently developed CBJ BMPs and ordinance is needed.

Little Campbell Creek - Fiscal Year 2014

Description City of Anchorage, Tributary to Campbell Creek

Lat/Long 61.1555770 -149.8768780

Concern: Enterococci and/or fecal coliform bacteria 2006-2015

Little Campbell Creek is in the Waterbody Recovery Track with water quality and aquatic life being a primary concern due to urban run-off and fecal coliform bacteria pollution. The State of Alaska included Little Campbell Creek on its 1998 303(d) list as water quality-limited due to fecal coliform, identifying urban runoff as the expected pollutant source. A TMDL was completed in 2004.

Goal: Meet water quality standards and remove impairment status 2011-2015

Collect data to support removal of Little Campbell Creek from the State's list of impaired waterbodies.

Action a: Document existing BMPs and assess additional BMP needs 2012-2015

Work with National Resource Conservation Service to determine if equestrian and horse boarding facilities have adequate BMPs in place to prevent bacterial contamination of Little Campbell Creek.

Concern: Turbidity 2012-2015

The Little Campbell Creek is in the Waterbody Recovery Track. In 2005 the USF&WS issued a report entitled "Frequency and Distribution of Fish Kills in Little Campbell Creek". The report indicated turbidity and high sediment flows were likely responsible for the frequent fish kills recorded in 2005 and previous years. There is concern sediment and turbidity may be having a long term impact on fish and other biotic life that live in Little Campbell Creek.

Goal: Reduce pollutant loading and improve water quality 2012-2015

Reduce the amount of sediment and turbidity entering the stream from high flow events.

Action b: Restore habitat 2012-2015

Develop a riparian habitat restoration plan. A 2005 USF&WS report, "Frequency and Distribution of Fish Kills in Little Campbell Creek" documented numerous fish kills. The reason for the fish kills was identified as increased sediment loads. A subsequent 2007 Municipality of Anchorage report, "Identification of Sediment Sources in Little Campbell Creek" concluded the majority of sediment observed was from adjacent stream banks that were eroding during high water events. The riparian habitat restoration plan should focus on stabilizing eroding stream banks and protecting adjacent riparian habitat to reduce sediment loads and future fish kills.

Concern: Instream flow protection 2010-2015

Little Campbell Creek is in the Waterbody Recovery Track. Increased development and water withdrawals could further reduce base flows in this watershed. An in-stream flow reservation is needed to ensure adequate water is available for fish and other aquatic life.

Goal: Protect and maintain instream flow and aquatic habitat 2010-2015

A reservation of water is needed to ensure adequate water is available for fish and other aquatic life.

Action c: Reservation of water 2010-2015

In consultation with ADF&G and DNR, compile biological, streamflow and other pertinent information to support an application(s) for a reservation of water according to procedures and regulations of the Alaska Water Use Act.

Little Rabbit Creek - Fiscal Year 2014

Description South Anchorage, above Potter's Marsh

Lat/Long 61.0779360 -149.8199240

Concern: Enterococci and/or fecal coliform bacteria 2012-2015

Little Rabbit Creek is in the Waterbody Recovery Track with water quality being the primary concern due to fecal coliform bacteria pollution. The State of Alaska included Little Rabbit Creek on its 1998 303(d) list as water quality-limited due to fecal coliform, identifying urban runoff as the expected pollutant source. A TMDL was completed in 2004.

Goal: Meet water quality standards and remove impairment status 2012-2015

Collect data to support removal of Little Rabbit Creek from the State's list of impaired waterbodies.

Action a: Document existing BMPs and assess additional BMP needs 2013-2015

Work in cooperation with the Municipality of Anchorage to document best management practices being implemented in this watershed to reduce fecal coliform and other pollutant loading. Grantee to assess the need for additional BMPs based on known fecal coliform source types identified in the 2010 ARRI Fecal Coliform Bacteria Assessment report. Generate a report that describes the location and type of BMPs currently implement, ones recommended, the pollutant(s) they are designed to address and a priority ranking for installation or replacement if needed.

Little Survival Creek - Fiscal Year 2014

Description Anchorage, small Tributary to Potter's Marsh

Lat/Long 61.0665550 -149.8004190

Concern: Enterococci and/or fecal coliform bacteria 2012-2015

Little Survival Creek is in the Waterbody Recovery Track for fecal coliform bacteria pollution being the primary concern. The State of Alaska included Little Survival Creek on its 1998 303(d) list as water quality-limited due to fecal coliform, identifying urban runoff as the expected pollutant source. A TMDL was completed in 2004.

Goal: Meet water quality standards and remove impairment status 2012-2015

Collect data to support removal of Little Survival Creek from the State's list of impaired waterbodies.

Action a: Document existing BMPs and assess additional BMP needs 2013-2015

Work in cooperation with the Municipality of Anchorage to document best management practices being implemented in this watershed to reduce fecal coliform and other pollutant loading. Grantee to assess the need for additional BMPs based on known fecal coliform source types identified in the 2010 ARRI Fecal Coliform Bacteria Assessment report. Generate a report that describes the location and type of BMPs currently implement, ones recommended, the pollutant(s) they are designed to address and a priority ranking for installation or replacement if needed.

Matanuska River - Fiscal Year 2014

Description Site is located about a 1/4 mile north of Eagle Street in Palmer along the inactive railroad track.

Lat/Long 61.6188888 -149.1069444

Concern: Debris 2012-2015

Matanuska River is in the Waterbody Recovery Track with water quality being the primary concern. In 2002/2003, DEC listed a section of the Matanuska River on the Clean Water Act Section 303(d) list for non-attainment of the residues standard for debris due to an unregulated and unpermitted debris disposal area. Items in this disposal area include railroad cars, automobiles, appliances, abandoned drums, and other historic and recently disposed items. This disposal area lies within the drinking water protection area for three public water systems. Debris continues in the river and riparian area upstream for approximately 1/2 mile but the main site of concern is the active dump. In August 2004, DEC conducted a site assessment study. Activities included characterizing and quantifying the debris; mapping the site; and conducting surface water, sediment, and soil samples. No hazardous or petroleum contamination was discovered. After characterizing the debris, options were developed for possible debris removal. Following subsequent meetings with involved parties [Alaska Railroad Corporation (ARRC), Department of Natural Resources-Lands, City of Palmer, Mat-Su Borough], in March 2005 the US Army Corps of Engineers issued a jurisdictional declaration that the railroad cars that are below ordinary high water (OHW) serve as bank stabilization material. As such, these items are no longer in violation of water quality standards (WQS). However, the remaining debris on the slope above the OHW has a potential of entering the water column; debris located on the upper layers are not considered bank stabilization material.

Goal: Meet water quality standards and remove impairment status 2012-2015

Removal of the upper layers of debris and implementation of prevention measures for further dumping will allow the river to meet water quality standards thus enabling DEC to de-list the river as impaired in the 2016 Integrated Report.

Action a: Implement watershed restoration plan or TMDL 2013-2015

Historic and recent debris located above ordinary high water that has the potential to slough into the river needs to be removed. The bottom layers stabilize the bank and must remain undisturbed. Immediate revegetation of any disturbed areas from the debris removal process must occur. No disturbance to the bank stability should occur. DEC prepared a Matanuska River Debris Removal Assessment, 2004, that should be consulted for more information. However, the cost estimates in the 2004 report should not be relied on to develop a project budget. The project budget should be realistic and based on current costs. A copy of the reports can be requested from DEC.

The project should include prevention measures such as educational signage and possibly fencing. The AK Railroad Corporation must be a partner on this project since they are the property owners.

Montana Creek (Juneau) - Fiscal Year 2014**Description** Juneau**Lat/Long** 58.3808030 -134.5978300**Concern: Urbanization 2006-2016**

Montana Creek is in the Protect and Maintain Waterbodies at Risk Track with water quality being the primary concern. The water is currently designated as a Category 3, data or information is insufficient to determine whether the Water Quality Standards (WQS) for any designated uses are attained. Main concerns include: access and trail maintenance, illegal trails, stream health, ATV usage, fishing and hiking activities, mining, degradation of state land, undocumented fish habitat, flood management, illegal debris/refuse dumping, enforcement, and invasive species. Activities in this area are currently being monitored via cameras by City and Borough of Juneau (CBJ). CBJ plans to install a gate near the rifle range during the summer of 2013; the gate will operate the same hours that the rifle range is open.

Goal: Protect and maintain water quality 2006-2016**Action b: Conduct education and outreach 2006-2016**

In collaboration with resource agencies and other stakeholders, design and implement an educational program aimed at watershed residents, businesses, and users, which addresses actions they can do to reduce non-point source pollution. This includes community workshops, web-based educational tools, signage, and traditional educational materials.

Action c: Collect Data 2006-2016

Prepare and implement a sampling plan to evaluate the current condition of the waterbody with respect to Alaska Water Quality Standards.

Mosquito Lake - Fiscal Year 2014**Description** Haines**Lat/Long** 59.4638760 -136.0232310**Concern: Enterococci and/or fecal coliform bacteria 2006-2016**

Mosquito Lake is in the Protect and Maintain Waterbodies at Risk Track, with water quality and habitat being primary concerns. The water was previously listed in the Data Collection and Monitoring Track, and is listed in Category 3 of 2012 Alaska Integrated Report for data or information is insufficient to determine whether the Water Quality Standards (WQS) for any designated uses are attained. There was concern that changes in land use and boat traffic may be impairing water quality for fecal coliform, turbidity, pH, conductivity, and shoreline habitat. However, based on the Mosquito Lake Water Quality and Invasive Plant Monitoring conducted in 2012 and 2013, fecal coliform monitoring results were all below the WQS, water parameters were acceptable, and only native aquatic plants were identified during the investigation. Onsite wastewater systems, surface runoff, and recreational activities, including motorized boat use, continue to be potential pollutant sources. Habitat concerns continue to include increased quantity of aquatic vegetation, corresponding with development of cabins along the lake shore.

Goal: Protect and maintain water quality 2006-2016**Action b: Conduct education and outreach 2006-2016**

Working with DEC and other stakeholders, develop and implement an educational program aimed at watershed residents, businesses, and users, which addresses actions they can do to reduce non-point source pollution related to debris, snow removal, and road runoff into One-mile Creek. This includes community workshops, web-based educational tools, signage, and traditional educational materials. Existing or new educational material will be distributed to property owners adjacent to the waterbody/riparian area. Material should contain information for agencies and organizations that can assist property owners wishing to implement recommendations made in outreach materials.

Ninilchik River - Fiscal Year 2014**Description** Lower Kenai Peninsula**Lat/Long** 60.0550770 -151.6661160**Concern: Urbanization 2011-2015**

Ninilchik River is in the Protect and Maintain Waterbodies at Risk Track with water quality and aquatic habitat being a primary concern due to land use activities. Properties located adjacent to or that drain to the Ninilchik River are being developed by property owners that may not understand the function of riparian habitat and its role in maintaining water quality.

Goal: Protect and maintain instream flow and aquatic habitat 2011-2015

Educate Ninilchik River property owners in ways to minimize their impacts on riparian habitat to promote water quality and the fish and wildlife that depend on it.

Action a: Conduct education and outreach 2011-2015

Working with DEC, ADF&G, and other stakeholders develop and provide educational material to Ninilchik River property owners on ways they can minimize impacts on the river when developing and maintaining their property. Existing or new education material should be cost effective and shall be distributed to all Ninilchik River property owners. Educational material should focus on ways property owners can minimize impervious surfaces, reduce stormwater run-off, and promote healthy riparian habitat. Material should contain contact information for agencies and organizations that can assist property owners wishing to implement recommendations made in the educational material.

Nome River - Fiscal Year 2014**Description** Nome**Lat/Long** 64.4833333 -165.3000000**Concern: Toxic and Other Deleterious Organic and Inorganic Substances 2013-2016**

Nome River is in the Data Collection and Monitoring Track with water quality being the primary concern.

Goal: Determine the existing condition of the water body 2013-2016**Action a: Collect Data 2013-2016**

Prepare and implement a sampling plan to evaluate the current condition of the waterbody with respect to Alaska Water Quality Standards.

Nushagak River - Fiscal Year 2014

Description This river drains into Bristol Bay at Dillingham

Lat/Long 59.0447930 -158.3816530

Concern: Toxic and Other Deleterious Organic and Inorganic Substances 2006-2016

Nushagak River is in the Data Collection and Monitoring Track with water quality, specifically metals as the primary concern.

Goal: Determine the existing condition of the water body 2006-2016

Baseline water quality data is needed for the Nushagak River to establish background conditions.

Action a: Collect Data 2006-2016

Prepare and implement a sampling plan to evaluate the current condition of the waterbody with respect to Alaska Water Quality Standards.

One Mile Creek - Fiscal Year 2011

Description Also called Holgate Creek; near Haines; entire creek

Lat/Long 59.2125000 -135.4463888

Concern: Urbanization 2011-2016

The stream is in the Protect and Maintain Waterbody at Risk Track with water quality and aquatic habitat being primary concerns and water quantity being a secondary concern. Threats to the stream include sedimentation and turbidity associated with land use. This stream is in the Anadromous Waters Catalogue for Dolly Varden, cutthroat trout, pink salmon, and coho salmon spawning and rearing, and chinook salmon rearing. ADF&G Sport Fish Division has been providing support and oversight of stream gaging efforts for an in-stream flow reservation. Five years of data are needed for an in-stream flow reservation.

Goal: Protect and maintain instream flow and aquatic habitat 2011-2016

Protect and maintain water quality to meet all designated uses and remove impairment status.

Action a: Conduct education and outreach 2011-2016

Working with DEC and other stakeholders, develop and implement an educational program aimed at watershed residents, businesses, and users, which addresses actions they can do to reduce non-point source pollution related to debris, snow removal, and road runoff into One-mile Creek. This includes community workshops, web-based educational tools, signage, and traditional educational materials. Existing or new educational material will be distributed to property owners adjacent to the waterbody/riparian area. Material should contain information for agencies and organizations that can assist property owners wishing to implement recommendations made in outreach materials.

Pullen Creek - Fiscal Year 2014**Description** Skagway**Lat/Long** 59.4511180 -135.3189470**Concern: Urbanization 2012-2016**

Pullen Creek is in the Waterbody Recovery Track with water quality and aquatic habitat being primary concerns. Pullen Creek has been on the Section 303(d) list since 1990 for non-attainment of the toxic and other deleterious organic and inorganic substances standard for metals. The lower mile of Pullen Creek was previously Section 303(d) listed with the Skagway Harbor listing, but was segmented out into its own listing in the 2006 report. A local nonprofit group completed an environmental assessment on the creek, collecting baseline monitoring data on water quality, flow, and sedimentation and developed an action strategy for Pullen Creek in 2006. Assessment results found no elevated levels of toxics in the water column. Elevated levels of lead, zinc, and barium have been found in stream bottom sediments and adjoining banks. Stream banks, are very stable but elevated levels of metals are found near railroad transport areas where ore was transported in the past. A waterbody recovery plan with BMPs was completed in 2006, and major riparian restoration projects were completed in summer 2009. A total maximum daily load (TMDL) was completed in 2010. The Taiya Inlet Watershed Council completed the Stormwater Best Management Practices: Protecting Pullen Creek, an Urban Stream (dated Spring/Summer 2012).

Goal: Meet water quality standards and remove impairment status 2012-2016

Protect and maintain water quality to meet all designated uses and remove impairment status. All new and existing development in the watershed should be managed according to the Pullen Creek waterbody assessment and TMDL loading analysis and allocations and the best management practices outlined. Work with new and existing development to ensure that BMPs are being implemented.

Action a: Implement BMPs or erosion control measures 2012-2016

Using 2005 Pullen Creek Assessment, 2006 Pullen Creek Waterbody Recovery Plan, Best Management Practices, 2007 Skagway Stormwater Mapping project, 2009 Storm drain/Outfall mapping, 2010 TMDL for Metals in the Waters of Pullen Creek, 2012 Stormwater BMP Manual project, and storm drain insert/sediment sampling information gathered in 2012 stormwater sampling projects develop a BMP demonstration site at the most suitable location noted in the previous studies. The demonstration site will highlight best management practice(s) in residential as well as commercial locations and directly address stormwater pollutants that enter Pullen Creek. BMP demonstration location must apply snow management measures outlined in the DEC guidance if applicable.

Sawmill Creek (Haines) - Fiscal Year 2014

Description near Haines; entire creek

Lat/Long 59.2342700 -135.4853300

Concern: Urbanization 2012-2016

Sawmill Creek (Haines) is in the Waterbody Recovery Track with water quality and aquatic habitat being primary concerns. Sawmill Creek was not Section 303(d) listed for debris, but was placed directly in Category 4b in 1996. Some debris removal work, in addition to a culvert replacement and reseeding, was completed in 1997. The debris was attributed to highway and maintenance sources. Priority actions for this water included designing and implementing an interagency watershed assessment and a recovery plan; establishing water quality monitoring objectives and implementing a water quality monitoring plan; and working with City of Haines to review and develop stormwater plans. An extensive residues cleanup was undertaken in 2006 and 2007. The bulk of the debris removed in 2007 was from legacy activities, including abandoned vehicles used for stream bank stabilization. Control measures are in place to prevent similar activities from occurring in the future, however, more importantly, public acceptance of using abandoned vehicles for stream bank stabilization is no longer tolerated. Enforcement by the City and Borough of Haines police department also has reduced such types of illegal disposal practices. Spring cleanup events occur annually in the City of Haines. The majority of debris within the creek, for which the water was placed in Category 4b originally, has been removed. The waterbody was moved from Category 4b to Category 2 in 2008. Current concerns include sedimentation and turbidity associated with land use, snow disposal practices, and other road maintenance activities.

Goal: Determine the existing condition of the water body 2012-2016

In an effort to maintain state water quality standards for all uses, a study to determine the effect of stormwater on this waterbody should be conducted. The study should focus on sediment, turbidity, fecal coliform, and habitat measurements including macroinvertebrates.

Action a: Collect Data 2012-2016

The action objectives are to map City of Haines stormwater discharges and collect baseline information on types of contaminants for later integration into a stormwater management plan. Deliverables will include a plan for mapping discharges, a list of Haines Borough stormwater intake and discharge points with GPS coordinates and associated information, GIS map layers categorizing discharge types, waterbodies impacted, anadromous waterbodies, and potential areas for restoration and/or mitigation related to stormwater discharge.

The stormwater quality assessment project should determine potential impacts to the biotic community due to stormwater runoff within the Sawmill Creek watershed. Water sampling is necessary to evaluate stormwater impacts to the biotic community, and test for relationships between water chemistry, impervious surface areas, and the abundance of undisturbed riparian areas and wetlands. Specific project objectives include: (1) measuring stream and stormwater chemical parameters to determine whether diffuse runoff is resulting in changes in water quality in exceedance of WQS; (2) test whether there is a statistically significant relationship between stream chemical, biological, habitat and flow parameters, and the measures of urban development; and (3) to determine if there are statistically significant relationships between changes in chemical and physical parameters and invertebrate and fish community metrics and /or mitigation related to stormwater discharge.

Action b: Conduct education and outreach 2012-2016

Develop and implement an educational program aimed at watershed residents, businesses, and users, which addresses actions they can do to reduce non-point source pollution related to snow removal and road runoff. This includes community workshops, signage, and web based/ printed educational materials. Existing or new educational material will be distributed to property owners adjacent to the waterbody/riparian area. Material should contain information for agencies and organizations that can assist property owners wishing to implement recommendations made in outreach materials. Deliverables should include; (1) a community event to label at least 100 stormwater drains in Haines with educational labels that identifies stormwater outfalls, for example: "Dump No Waste, Drains to Chilkat River." and (2) a report summarizing public outreach.

Sawmill Creek (Sitka) - Fiscal Year 2014

Description SE of Sitka, flows into Sawmill Cove

Lat/Long 57.0482940 -135.2285240

Concern: Sediment 2006-2016

Sawmill Creek (Sitka) is in the Data Collection and Monitoring Track with water quality (flow alterations, siltation/sedimentation, and temperature) being the primary concern. The water is currently listed in the Draft 2012 Integrated Report in Category 3 - data or information is insufficient to determine whether the Water Quality Standards (WQS) for any designated uses are attained. This 2008 nomination was based on the City and Borough of Sitka Blue Lake hydroelectric project, located approximately 5 miles southeast of Sitka and impounds the waters of Sawmill Creek, formerly the Medvetche River.

Goal: Determine the existing condition of the water body 2006-2016**Action a: Collect Data 2006-2016**

Prepare and implement a sampling plan to evaluate the current condition of the waterbody with respect to Alaska Water Quality Standards.

Seldovia Bay - Fiscal Year 2014**Description** Southcentral**Lat/Long** 59.4240000 -151.7250000**Concern: Toxic and Other Deleterious Organic and Inorganic Substances 2006-2016**

Seldovia Bay is on the Protect and Maintain Waterbodies at Risk Track with water quality being the primary concern.

Goal: Reduce pollutant loading and improve water quality 2006-2016

Alaska E-Map monitoring of Seldovia Bay found high levels of polycyclic aromatic hydrocarbons (PAHs) in the sediment. Past fuel spills and poor boat maintenance operation are likely sources of the high levels of PAHs. The goal is to reduce future inputs of PAHs and promote clean boating best management practices (BMPs) in the bay and Seldovia Harbor.

Action a: Conduct education and outreach 2006-2016

Reduce petroleum spills and promote clean boating practices in Seldovia Bay and Seldovia Harbor.

Seldovia Bay (Harbor) - Fiscal Year 2014

Description In Kachemak Bay

Lat/Long 59.4240000 -151.7250000

Concern: Toxic and Other Deleterious Organic and Inorganic Substances 2006-2016

Seldovia Harbor is in the Data Collection and Monitoring Track with water quality being the primary concern.

Goal: Determine the existing condition of the water body 2006-2016

The goal for Seldovia Harbor is to determine if current water quality supports all designated uses for this waterbody.

Action a: Other 2015-2016

Work with the City of Seldovia and key stakeholders to develop a clean boating program for Seldovia Harbor and the surrounding bay.

Action b: Collect Data 2010-2016

Prepare and implement a sampling plan to evaluate the current condition of the waterbody with respect to Alaska Water Quality Standards.

Ship Creek-Glenn Hwy. Bridge Down to Mouth - Fiscal Year 2014

Description Anchorage, Glenn Highway to mouth

Lat/Long 61.2270100 -149.9025900

Concern: Enterococci and/or fecal coliform bacteria 2006-2016

Ship Creek from the Glenn Highway to the confluence with Cook Inlet is on the Waterbody Recovery Track because the creek is listed as impaired for fecal coliform bacteria. A TMDL was completed and approved by EPA in 2004.

Goal: Meet water quality standards and remove impairment status 2006-2016

The goal for lower Ship Creek is to remove it from the State's list of impaired waterbodies.

Action a: Document existing BMPs and assess additional BMP needs 2006-2016

Work in cooperation with the Municipality of Anchorage to document best management practices (BMPs) being implemented in this watershed to reduce fecal coliform and other pollutant loading into Ship Creek. Generate an assessment report that describes the location and type of BMPs currently implemented, recommended BMPs, the pollutant(s) they are designed to address, and a priority ranking for installation or replacement if needed.

Sitka Harbor - Fiscal Year 2014**Description** Southeast**Lat/Long** 57.0539000 -135.3500000**Concern: Urbanization 2006-2016**

Sitka Harbor is in the Protect and Maintain Waterbodies at Risk Track with water quality being the primary concern.

Goal: Protect and maintain water quality 2006-2016**Action a: Collaboration 2006-2016**

Coordinate with City of Sitka to ensure new and existing development in the watershed is managed with best management practices. Sitka Harbor is a likely candidate for the Alaska Clean Harbors program.

Situk River - Fiscal Year 2014**Description** Yakutat**Lat/Long** 59.4416666 -139.5665790**Concern: Toxic and Other Deleterious Organic and Inorganic Substances 2006-2016**

Situk River is in the Data Collection and Monitoring Track with water quality (metals, low dissolved oxygen, and temperature) being the primary concern. The water is currently listed in the 2012 Draft Integrated Report in Category 3 - data or information is insufficient to determine whether the Water Quality Standards (WQS) for any designated uses are attained.

Goal: Determine the existing condition of the water body 2006-2016**Action a: Collect Data 2006-2016**

Prepare and implement a sampling plan to evaluate the current condition of the waterbody with respect to Alaska Water Quality Standards.

Slikok Creek - Fiscal Year 2014

Description Tributary of the lower Kenai River

Lat/Long 60.4824310 -151.1265560

Concern: Urbanization 2010-2016

Slikok Creek is in the Protect and Maintain Waterbodies at Risk Track with changes in land use the primary concern.

Goal: Protect and maintain water quality 2010-2016

Protect water quality as land use changes in this watershed.

Action a: Collaboration 2010-2016

Work cooperatively with riparian property owners to ensure land development and stormwater doesn't negatively impacted water quality in the stream and surrounding wetlands.

Skagway Harbor - Fiscal Year 2014**Description** City of Skagway**Lat/Long** 59.4486750 -135.3257700**Concern: Toxic and Other Deleterious Organic and Inorganic Substances 2012 - 2016**

Skagway Harbor is in the Waterbody Recovery Track with water quality being the primary concern due to metal contamination from an ore loading facility. Skagway Harbor placed on Alaska's 1990 Section 303(d) impaired waterbody list due to sediment toxicity from metals. Studies concluded that a decrease in infauna diversity in the harbor was present. Additional sampling and analysis in 2007 and 2008 concluded that petroleum hydrocarbons, not metals, are the primary cause for the decrease in infauna diversity in the harbor. ADEC determined that this water is impaired from petroleum hydrocarbons due to its inability to fully support aquatic life. EPA approved a TMDL for petroleum in April 2011, and the harbor is proposed to be moved to Category 4a in the Draft 2012 Integrated Report. Taiya Inlet Watershed Council completed a Stormwater Best Management Practices: Protecting Pullen Creek, an Urban Stream (dated Spring/Summer 2012).

Goal: Implement actions specified in TMDL 2012 - 2016

Support implementation of BMP's for petroleum hydrocarbons as outlined in the 2011 TMDL, and the Stormwater Best Management Practices: Protecting Pullen Creek, an Urban Stream (dated Spring/Summer 2012).

Action a: Implement watershed restoration plan or TMDL 2012 - 2016

Coordinate with City and Borough of Skagway to ensure that all new and existing development in the watershed should be managed according to the Skagway Harbor TMDL and the best management practices outlined. Work with new and existing development to ensure that BMPs are being implemented. Skagway Harbor is a likely candidate for Alaska Clean Harbors program.

Goal: Reduce pollutant loading and improve water quality 2012 – 2016

Develop and implement a stormwater management plan based on project studies.

Action b: Implement BMPs or erosion control measures 2012 – 2016

Using the 2007 Skagway Stormwater Mapping project and relevant area studies, to develop local ordinances, supported by a public education and awareness program, to address:(1) proper operation and maintenance for on-site septic systems; (2) minimize stormwater runoff from new construction, including roads, highways and bridges; (3) stream setbacks, bank stabilization practices, and in-stream structures to protect water quality and fish habitat; (4) land use zoning of activities within public drinking water protection areas; and (5) operating standards for activities within drinking water protection areas. Proposals to develop local ordinances must demonstrate local government support and involvement.

Solomon River, East Fork - Fiscal Year 2014

Description Seward Peninsula, east of Nome, near Safety, Nome Council Road

Lat/Long 64.6923838 -164.2782598

Concern: Sediment 2006-2016

Solomon River, East Fork is in the Data Collection and Monitoring Track with sediment being the primary concern.

Goal: Determine the existing condition of the water body 2013-2016

Action a: Collect Data 2013-2016

Prepare and implement a sampling plan to evaluate the current condition of the waterbody with respect to Alaska Water Quality Standards.

Stariski Creek - Fiscal Year 2014

Description Lower Kenai Peninsula

Lat/Long 49.8917790 -151.7846630

Concern: Urbanization 2011-2015

Stariski Creek is in the Protect and Maintain Waterbodies at Risk Track with water quality and aquatic habitat being a primary concern due to land use activities. Properties located adjacent to or that drain to the Ninilchik River Creek are being developed by property owners that may not understand the function of riparian habitat and its role in maintaining water quality.

Goal: Protect and maintain instream flow and aquatic habitat 2011-2015

Educate Stariski Creek property owners in ways to minimize their impacts on riparian habitat to promote water quality and the fish and wildlife that depend on it.

Action a: Conduct education and outreach 2011-2015

Working with DEC, ADF&G, and other stakeholders develop and provide educational material to Stariski Creek property owners on ways they can minimize impacts on Stariski Creek when developing and maintaining their property. Existing or new education material should be cost effective and shall be distributed to all Stariski Creek property owners. Educational material should focus on ways property owners can minimize impervious surfaces, reduce stormwater run-off, and promote healthy riparian habitat. Material should contain contact information for agencies and organizations that can assist property owners wishing to implement recommendations made in the educational material.

University Lake - Fiscal Year 2014

Description Anchorage, part of Chester Creek

Lat/Long 61.1859140 -149.8027900

Concern: Enterococci and/or fecal coliform bacteria 2012-2015

University Lake has been on the Section 303(d) list since 1990 for non-attainment of the fecal coliform (FC) bacteria standard. The Chester Creek Drainage Water Quality Assessment, focusing on an area that included University Lake, was completed in April 1993. It determined that the waterbody was impaired only for FC bacteria. A TMDL for FC bacteria was developed and approved by EPA (dated May 2005).

Goal: Meet water quality standards and remove impairment status 2012-2015

The goal is to collect data to support removal of University Lake from the State's list of impaired waterbodies.

Action a: Document existing BMPs and assess additional BMP needs 2013-2015

Work with the Municipality of Anchorage to document best management practices being implemented in the Chester Creek watershed including University Lake to reduce fecal coliform and other pollutant loading. Assess the need for additional BMPs based on known fecal coliform source types identified in the 2010 ARRI Fecal Coliform Bacteria Assessment report. Generate a report that describes the location and type of BMPs currently implement, ones recommended, the pollutant(s) they are designed to address, and a priority ranking for installation or replacement if needed.

Vanderbilt Creek - Fiscal Year 2014

Description Juneau

Lat/Long 58.3501000 -134.4914000

Concern: Urbanization 2013-2016

Vanderbilt Creek is in the Waterbody Recovery Track with water quality and aquatic habitat being primary concerns. Threats to the stream include sedimentation and turbidity, low dissolved oxygen, and nutrients associated with land use. A Total Maximum Daily Load (TMDL) for Sediment and Turbidity with consideration of Debris and Habitat Modification was approved by EPA in 1996. A thorough survey and routine periodic updates with monitoring is needed. Other concerns include barriers to fish passage, bank erosion and riparian damage.

Goal: Implement actions specified in TMDL 2013-2016

All new and existing development in the watershed should be managed according to the 1995 TMDL as well as CBJ ordinances relating to stormwater runoff. Modify water quality monitoring parameters and sampling plan as needed to incorporate non-point source pollution from new land use activity. Continue to verify TMDL loading assumptions in relation to new ordinances and compliance. Work with new and existing development to ensure that BMPs are being applied to ensure that pollution prevention actions are implemented in compliance with the goals of the TMDL.

Action b: Conduct education and outreach 2013-2016

This action should be conducted throughout the Juneau watersheds, and include Duck Creek, Jordan Creek, Vanderbilt Creek, Lemon Creek, and Pederson Hill Creek. In collaboration with resource agencies, design and implement an education campaign aimed at stakeholders (commercial and residential) along Vanderbilt Creek to inform them of commercial and residential sources of non-point source pollutants and application of Best Management Practices (BMPs) associated with stormwater runoff. The JWP has conducted several events on these creeks through the ACWA program including a recovery and water quality monitoring plan and stream clean-up activities. Expansion of these efforts and integration of recently developed CBJ BMPs and ordinance is warranted.

Action c: Implement BMPs or erosion control measures 2013-2016

This action should be combined with the Jordan Creek and Duck Creek projects. Use remote sensing technology (i.e., motion detection cameras) to document potential sources of illegal debris activity (dumping). Document current debris conditions against historic amounts noted during the development of the Total Maximum Daily Load (TMDL) for Debris. Compare results as to whether debris/residue management efforts are leading to water quality improvements through existing means such that TMDLs for Debris/Residue may be removed. Results may also be used to enhance local ordinances.

Willow Creek - Fiscal Year 2014

Description Southcentral near Willow. Headwaters in Talkeetna Mountains and mouth empties into Susitna River.

Lat/Long 61.7781220 -150.1652550

Concern: Sediment 2014-2016

Willow Creek is in Data Collection and Monitoring Track with aquatic habitat and water quality as related to recreational impacts being primary concerns. Riparian habitat loss, bank erosion, bank modification, and a shift in streambed substrate may be results of development and recreational impacts. Willow Creek experienced extensive flooding in summers of 2006 and 2012. Continued impacts to water quality and aquatic habitat are unknown.

Goal: Determine the existing condition of the water body 2014-2016

Conduct water quality and aquatic habitat assessment to determine the current condition of Willow Creek.

Action a: Collect Data 2014-2016

Prepare and implement a sampling plan to evaluate the current condition of the waterbody with respect to Alaska Water Quality Standards.