DOI-BLM-AKF010-2015-33-CX

A. Background

BLM Office: Arctic Field Office LLAKF01000

Lease/Serial/Case File No. FF097009

Applicant: Christian Zimmerman, Michael Carey, Joshua Koch, Joel Schmutz, Katherine Wheeler
USGS Alaska Science Center
4210 University Drive
Anchorage, Alaska 99508

Proposed Action Title/Type: Interdisciplinary Bioenergetics and Contaminants Study/ NPR-A Permit

Date of Proposed Action: July 13 – August 7, 2015

General Location of Proposed Action: Arctic Coastal Plain

Description of Proposed Action: The applicants, Christian Zimmerman et al with the USGS Alaska Science Center, have requested authorization for field activity access, and landing by a floatplane on lands within the National Petroleum Reserve in Alaska (NPR-A) managed by the Bureau of Land Management (BLM).

The proposed action is designed to conduct an interdisciplinary, collaborative study on several lakes in the Barrow/Atqasuk watershed to better understand how and to what extent continued changes in thermal regimes will affect fish growth, food web structure, and bioaccumulation of mercury. The research would include both collection of empirical data and modeling with the overall aim to enable better predictions of broad-scale ecological and ecotoxicological consequences of climate change in shallow Arctic lakes. The research would take place in the Barrow/Atqasuk watershed (Figure 1), which includes the Meade River watershed and the portion of the northwest coastal plain located between Atqasuk and Barrow, Alaska. Study lakes would be selected from lakes monitored by the Circumarctic Lake Observation Network (CALON), an NSF Arctic Observing Network funded program. The CALON activity was previously authorized via a BLM Right of Way to Dr. Benjamin Jones (FF095373).

The applicants would select three lakes from each of three nodes on the Western Transect of CALON: Barrow, Atqasuk, and Reindeer Camp (Figure 1). Given the differences in thermal regimes among the three nodes, the CALON lakes would provide a natural experiment for determining the role of temperature in controlling food web structure, fish growth and performance, and mercury concentrations in fishes in lakes of the Arctic Coastal Plain. Fish would be captured from each of the nine study lakes using gill nets, fyke nets, minnow traps, and angling. While the primary aim would be to capture a minimum of 8-10

individuals/fish species/lake, standard gear would be used in each lake and effort, habitat type, and depth would be recorded to enable future comparisons of catch-per-unit effort. The applicant would collect all fish species present, and as large a size range as possible. For growth and age analyses of least cisco and broad whitefish, the applicant would collect 50 individuals of each species from each lake. Previous sample collections in the region suggest that fish species would include northern pike, broad whitefish, least cisco, ninespine stickleback, Alaska blackfish and Arctic grayling. Benthic invertebrates would be collected from the littoral zone of each lake with an Ekman dredge and kick nets. Profundal benthic invertebrates would be collected with an Ekman dredge (Figure 2) that is deployed at the deepest point of each lake. The dredge collects an area of material approximately 6" x 6" x 6", 0.5 cubic feet. They anticipate using the dredge up to 3 times in each lake. Materials would be cleaned of mud and organic debris and only invertebrates would be collected.

Sampling would occur along lake shorelines until an adequate mass has been collected for stable isotope andmercury analyses (~50 mg). Zooplankton would be collected using vertical tows of a 153 µm net (0.5 m opening) whereas epilithon would be collected by scraping material from bottom sediments in littoral zones. Submerged and emergent aquatic vegetation would be sampled by hand, and agitated in lake water to remove epiphyton. For all species, except ninespine stickleback, fish would be measured, weighed, and photographed in the field before being dissected for dorsal muscle tissue and sagittal otoliths. Sex and maturity would be determined, and stomach contents would be removed. Ninespine stickleback would be measured, weighed, and frozen whole in the field; previous research has shown that stable isotope ratios and total mercury concentrations do not differ significantly between muscle and whole body samples for this species.

This project would base its operations out of the village of Atqasuk and would require flights to study sites daily during the period July 13 – August 7, 2015 using a float equipped fixed-wing aircraft. No remote camps will be used. Fuel would be obtained at Atqasuk. Six people would be involved and 65 fixed-wing take-offs and landings would be required for this project.

B. Land Use Plan Conformance

The proposed action is in conformance with the following planning document: National Petroleum Reserve-Alaska Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) dated November 2012 and associated Record of Decision dated February 2013.

The proposed action is in conformance with the Naval Petroleum Reserves Production Act which allows for the authorization of uses consistent with the purposes of the Act.

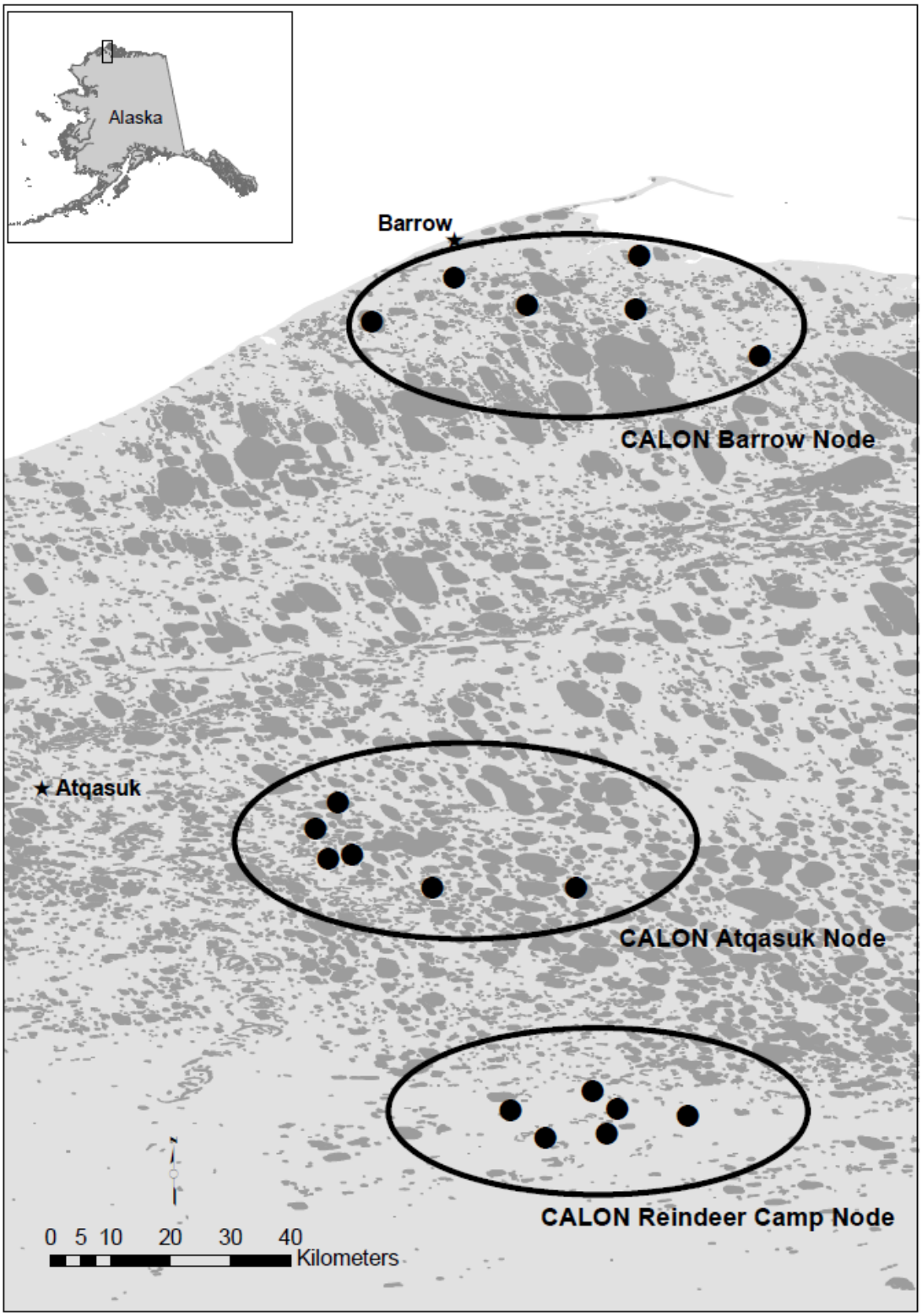

Figure 1. Applicant Submitted map of the locations of CALON project study lakes.

Figure 2: Ekman Dredge

Legal Description: All in Umiat Meridian

CALON Site Name	Lat(Dd)	Lon(Dd)	Township	Range	Section	Comment
BRW 100	71.24163	-156.77391	T22N	R18W	20	No BLM Managed Land
BRW 103	71.12312	-156.31664	T21N	R17W	36	No BLM Managed Land
BRW 104	71.19358	-156.50224	T21N	R17W	8	No BLM Managed Land
BRW 106	71.17556	-156.89731	T21N	R19W	14	No BLM Managed Land
BRW 107	71.27396	-156.49700	T22N	R17W	8	No BLM Managed Land
BRW 130	71.19909	-156.66536	T21N	R18W	3	No BLM Managed Land
ATQ 200	70.45475	-156.94790	T13N	R20W	26	No BLM Managed Land
ATQ 201	70.32723	-156.80655	T11N	R19W	7	BLM
ATQ 204	70.37249	-156.96270	T12N	R20W	21	BLM (Private land within 2 miles South)
ATQ 205	70.37770	-156.92665	T12N	R20W	22	BLM (Private land within 2 miles South)
ATQ 206	70.41557	-156.98128	T12N	R20W	4	BLM

ATQ 207	70.32911	-156.59154	T11N	R19W	1	BLM
RDC 300	69.96079	-156.54585	T7N	R19W	14	BLM
RDC 306	69.99649	-156.52992	T7N	R19W	1	BLM
RDC 308	69.98635	-156.42445	T7N	R18W	5	BLM
RDC 309	70.02459	-156.56652	T8N	R19W	26	BLM
RDC 311	69.99614	-156.68912	T7N	R19W	5	BLM
RDC 312	69.95348	-156.63817	T7N	R19W	21	BLM

BRW – Barrow ATQ – Atqasuk RDC – Reindeer Camp

C. Compliance with NEPA:

The IAP/EIS Record of Decision for the NPR-A developed stipulations and best management practices applicable to all activities in NPR-A. The stipulations and best management practices applicable to the proposed action will be provided, along with project-specific mitigation, to the applicant and are entitled: "FF097009 USGS Interdisciplinary Bioenergetics & Contaminants Study 2015 Stipulations."

The Proposed Action is categorically excluded from further documentation under the National Environmental Policy Act (NEPA) in accordance with 516 DM 2, Appendix 1, or 516 DM 11.9, Specifically the proposed action meets the criteria for a categorical exclusion under 516 DM 11.9, BLM H-1790-1 National Environmental Policy Act Handbook Appendix 4 (F-10) BLM Categorical Exclusions.

"Nondestructive data collection, inventory (including field, aerial, and satellite surveying and mapping), study, research, and monitoring activities."

This categorical exclusion is appropriate in this situation because there are no extraordinary circumstances potentially having effects that may significantly affect the environment. The proposed action has been reviewed, and none of the extraordinary circumstances described in 516 DM 2 apply.

Extraordinary Circumstances	**Yes**	**No**
2.1 Have significant impacts on public health or safety.		**X**
2.2 Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas.		**X**
2.3 Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA Section 102(2) (E)].		**X**

2.4 Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks.		**X**
2.5 Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects.		**X**
2.6 Have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects.		**X**
2.7 Have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by either the bureau or office.		**X**
2.8 Have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species.		**X**
2.9 Violate a Federal law, or a State, local, or tribal law or requirement imposed for the protection of the environment.		**X**
2.10 Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898).		**X**
2.11 Limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007).		**X**
2.12 Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112).		**X**

D. Approval and Contact Information

I considered the proposed action and have determined that there is no potential for significant impacts.

/s/ 7/2/2015

Stacie McIntosh — Date
Authorized Officer, Arctic Field Office

Contact Person:

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