

Development of macroinvertebrate and diatom biological monitoring indices for wadeable streams in the Kvichak and Nushagak watersheds

Annual progress report

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During FY 08 we spend considerable effort selecting potential sampling sites throughout the study region and devising a 3-year field sampling strategy. This time frame, similar to that used previously in the Cook Inlet and Southeast regions, will allow us to sample an adequate number of sites while also measuring year-to-year variation in macroinvertebrate and diatom communities. We will sample additional sites in FY09 and FY10 (~25 per year), including several sites that will be sampled each year. During FY11 we will assimilate all data, calibrate biological monitoring indices, and draft a final report describing the results.

We contacted potential cooperators throughout the study region to solicit input on the selection of field sites and logistical assistance during field sampling. So far we've received input from the Nushagak-Mulchatna Watershed Council, Trout Unlimited, the Nature Conservancy, the Alaska Department of Fish and Game, the National Park Service, attendees at the Western Alaska Interdisciplinary Science Conference, and the communities of Ekwok, Dillingham, and Aleknagik. Based on recommendations from these project partners and GIS/map analysis, we have selected 153 potential sites in the Kvichak and lower Nushagak watersheds (Figure 1). Due to the expense of air transport and the scarcity of roads in the study area, we intend to sample many of our proposed streams near their confluence with navigable rivers or lakes.

During this year's field sampling, we collected diatoms, macroinvertebrates, physico-chemical, and habitat data from 24 stream sites throughout the eastern portion of the study area (Table 1, Figures 1 and 2). We sampled sites in the Iliamna area with support from the Lake and Peninsula School District and led a 3-day biological monitoring workshop at the District's Natural Resources Science Camp. We accessed sites along Lake Clark with transportation and lodging from Nondalton Tribal Council and the National Park Service. We then used chartered aircraft to haul gear and ENRI staff to the Koktuli River where we sampled additional sites while floating the river from Frying Pan Lake to the Swan River. The Nushagak-Mulchatna Watershed Council provided boat transportation from the lower Koktuli to Ekwok, and from there we returned to Anchorage via chartered and scheduled aircraft (including all gear and samples). The samples are now at ENRI's lab and processing and identification will proceed in the upcoming weeks.

During FY09 we are planning to sample sites along the Chilikadrotna River and the upper Mulchatna River. Additionally, we may be getting supplementary transportation



Table 1. Stream sites sampled during the FY08 field season.

Stream name	River basin	Date sampled	Latitude (WGS 84)	Longitude (WGS 84)
Zackar Creek	Iliamna Lake	5/18/2008	59.66825	155.13288
Roadhouse Creek	Iliamna Lake	5/19/2008	59.75741	154.85013
Alexy Creek	Newhalen River	5/20/2008	59.86742	154.85312
Bear Creek	Newhalen River	5/21/2008	59.82415	154.88362
NNT Iliamna Lake	Kvichak River	5/22/2008	59.77912	154.72208
NNT Newhalen River @ RM 10	Newhalen River	5/23/2008	59.83185	154.88617
NNT Newhalen River @ RM 22	Newhalen River	5/25/2008	59.92248	154.88864
NNT Newhalen River @ RM 19	Newhalen River	5/25/2008	59.90288	154.89186
NNT Sixmile Lake	Newhalen River	5/26/2008	59.95522	154.87152
NNT Lake Clark	Newhalen River	5/26/2008	60.05839	154.62848
22 Creek	Lake Clark	5/27/2008	60.13906	154.46458
Tommy Creek	Lake Clark	5/28/2008	60.23117	154.23354
Priest Rock Creek	Lake Clark	5/29/2008	60.31150	154.17578
NNT Chulitna Bay	Lake Clark	5/30/2008	60.20395	154.49428
NNT Upper Talarik Creek @ RM 19	Iliamna Lake	6/2/2008	59.79247	155.24597
NNT Upper Talarik Creek @ RM 18	Iliamna Lake	6/2/2008	59.78921	155.25395
NNT South Fork Koktuli River @ RM 23	Mulchatna River	6/3/2008	59.82543	155.35710
NNT South Fork Koktuli River @ RM 19	Mulchatna River	6/4/2008	59.81724	155.42325
NNT South Fork Koktuli River @ RM 15	Mulchatna River	6/4/2008	59.79815	155.51123
NNT South Fork Koktuli River @ RM 9	Mulchatna River	6/6/2008	59.81045	155.61197
NNT South Fork Koktuli River @ RM 2	Mulchatna River	6/7/2008	59.81700	155.76492
NNT Koktuli River @ RM 33	Mulchatna River	6/7/2008	59.87971	155.83125
NNT Koktuli River @ RM 29	Mulchatna River	6/8/2008	59.90887	155.90314
NNT Koktuli River @ RM 24	Mulchatna River	6/8/2008	59.92757	155.98262

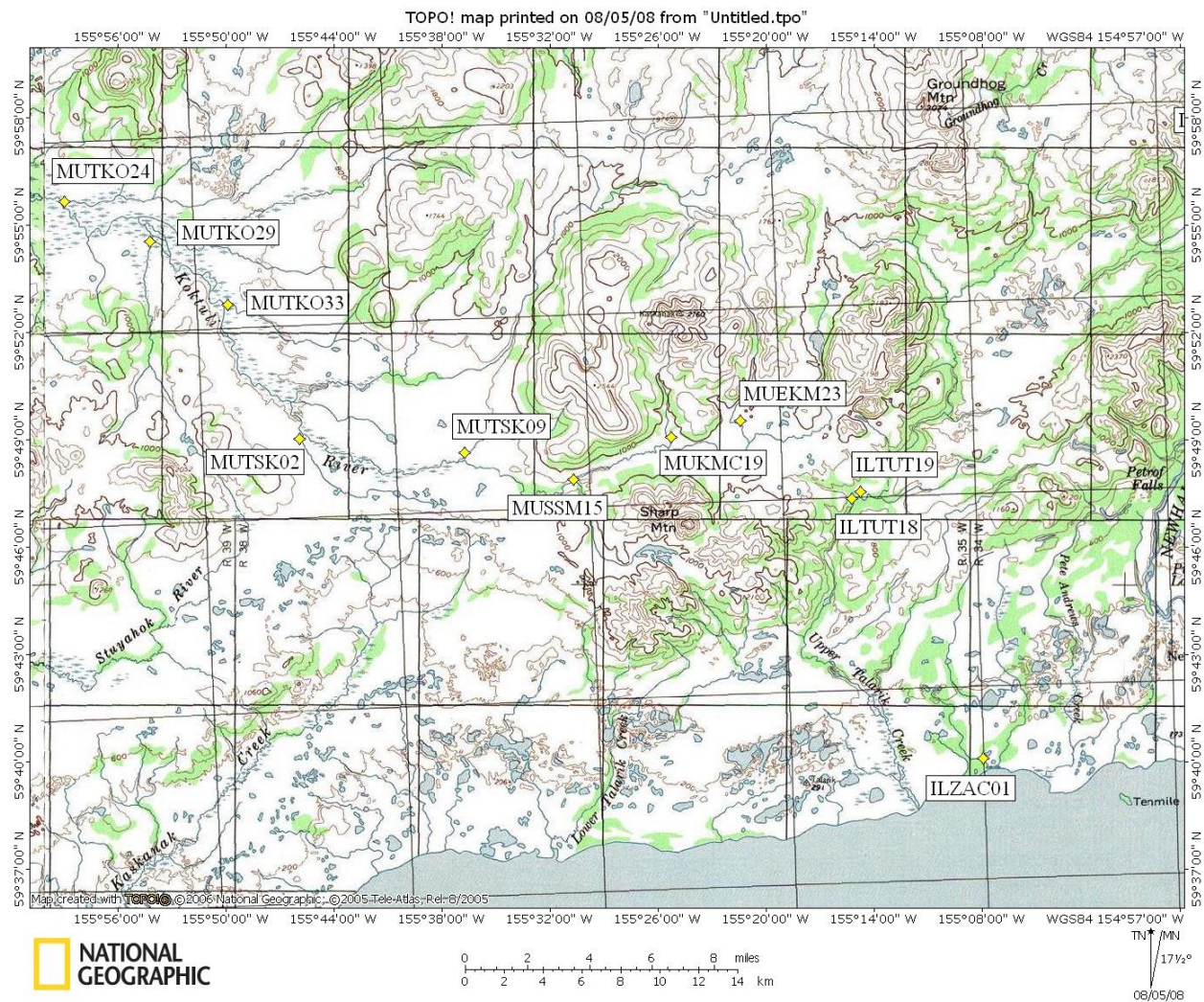


Figure 2. Map showing FY08 stream sites along the Kaktuli River, Upper Talarik Creek, and Iliamna Lake.