

**“The World has Changed”:
Iñalit Traditional Knowledge of Walrus in the Bering Strait**

North Pacific Research Board Project 1013

Kawerak, Inc., (907) 443-4273, socsci@kawerak.org

Brenden Raymond-Yakoubian

Lawrence Kaplan

Meghan Topkok, Kawerak, Inc.

Julie Raymond-Yakoubian, Kawerak, Inc.

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1 **Abstract**

2 This project documented, through a multidisciplinary approach, Little Diomedes experts' local and
3 traditional ecological and cultural knowledge of Pacific walrus (*Odobenus rosmarus divergens*), and
4 examined the “cultural-ecological relationship” between walruses and people to document a variety of
5 changes and adjustments in both walrus and human populations over time. This project was set within a
6 context of increasing concerns over changes and threats to walrus, their environment, and indigenous
7 people whose lifeways are tied to their relationships to walrus populations. Additionally, it was set within
8 a context of limited existing bio-ecological and anthropological knowledge of Diomedes human-walrus
9 relationships; of a concern for the need to better interface local traditional knowledge with western
10 science, policy, and management; and of a desire amongst Little Diomedes people to document their
11 knowledge and language relating to walrus. Through archival research, linguistic and ethnographic
12 interviews, and synthesis of data from other important ongoing projects, this project synthesized and
13 analyzed archival data and over 50 ethnographic, mapping, and linguistic interviews with 19 indigenous
14 experts on Diomedes and walrus. This work was conducted with the ongoing consent and participation of
15 the Little Diomedes community, and was accomplished through the work of a multidisciplinary project
16 team over a three-year period. Key contributions of this project include data-driven policy and
17 management recommendations relating to walrus, a unique synthesis of bio-ecological and
18 anthropological data relating to Diomedes and walrus, and a rich portrait of the interconnected and
19 systemic changes relating to walrus and Diomedes.

20

21 **Key Words**

22 Iñalit

23 Diomedes

24 Iñaliq (Little Diomedes Island)

25 Bering Strait

26 Pacific Walrus (*Odobenus rosmarus divergens*)

27 Local Traditional Knowledge (LTK)

28 Iñupiaq

29 Ethnographic interviews

30 Linguistic interviews

31 Archival research

32

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96

97 **Study Chronology**

98 After funding for this project was received, there were several personnel changes which resulted in a
99 number of changes in project scope. Changes to the scope of work included limiting archival research
100 and literature review primarily to materials housed in Kawerak's Eskimo Heritage Program, and the
101 removal of mapping activities and participant observation as data collection methods. Six progress
102 reports have been completed for this project; the progress reports detail changes in personnel and project
103 scope, as well as challenges related to traveling to Diomedes and the translation of project materials.

104

105

106 **Introduction**

107 Little Diomed Island is a small Alaskan island (encompassing approximately 2.8 square land miles) in
108 the narrowest portion of the Bering Strait (approximately 51 miles wide in this area). The island is
109 adjacent to the international dateline with a larger sister island on the Russian side, Big Diomed. Little
110 Diomed is approximately 2.5 miles from Big Diomed, 25 miles from the Alaskan mainland, and just
111 under 30 miles from the Siberian mainland. One community, Diomed, is located on the island, with a
112 population of 115 people in 2010, approximately 92% of whom are American Indian or Alaska
113 Native(State of Alaska DCED 2013); the majority of residents are Iñupiaq Eskimo. Transportation to and
114 from the island occurs primarily through weekly helicopter service throughout the year, as well as plane
115 service during a small portion of the winter when the shorefast ice is thick enough to support an ice
116 runway offshore of Little Diomed Island. Walrus hunting and consumption are an important part of the
117 Diomed way of life, and are an extension of practices going back thousands of years to the origins of the
118 Thule tradition on St. Lawrence Island to the south. Diomed and the two communities on St. Lawrence
119 Island have harvested the most walrus of all the Alaska villages for over half a century (Robards 2008:
120 18). In the local Iñupiaq Eskimo dialect, Little Diomed Island is referred to as *Iñaliq*, and the people of
121 the island are known as *Iñalit*.

122
123 This research had two main objectives, detailed in greater detail further below in the subsequent section.
124 These objectives were:

- 125 • To employ a multidisciplinary approach which would contribute to biological, ecological and
126 anthropological knowledge of walrus, addressing both a need to supplement current limited
127 knowledge about walrus as well as a need to interface LTK with scientific processes.
- 128 • To address Little Diomed residents’ desires and concerns about the need to document their
129 knowledge relating to walrus, as well as concerns about walrus and environmental change.
130 Additionally, the project also aimed to produce products which spoke to these concerns and were of
131 value and utility to Little Diomed and other region communities.

132
133 This research was based on the premise that residents of Diomed have a wealth of information about
134 Pacific walrus (*Odobenus rosmarus divergens*) that can be useful in a variety of areas such as marine
135 planning, policy, and management, and heritage preservation. The information presented in this report
136 from Diomed experts is Local Traditional Knowledge that is based on intimate observational, evidence-
137 based understandings of walrus behavior in context that has been collected, tested, and shared over many
138 generations. This project was initiated for a number of reasons, all of which speak to the particular
139 scientific, management, and societal contexts in which this work was proposed.

140 The first reason this project was initiated is that documentation of bio-ecological and anthropological
141 knowledge of walrus is limited, while at the same time - from both a scientific and policy/management
142 perspective - there is a growing chorus suggesting an imperative for greater understanding of this marine
143 mammal in the face of global climate-related changes. This project sought to work in the vein pioneered
144 by Fienup-Riordan's (1986) work on Yup'ik subsistence patterns in the Yukon Delta region, in that it
145 sought to systematically analyze annual human and community adjustments to crucial subsistence
146 resource fluctuations. Previous local traditional knowledge (LTK) research on Little Diomedede has
147 focused on the topics of population structure, ecological adaptation, and hunting boat crews (Ellana
148 1983), and subsistence, identity, and gender (Jolles et al. 2001, Jolles 2002, Jolles et al. 2005, and Jolles
149 2006). This work seeks to build off of those previous works by examining in greater depth the
150 considerations just noted above, by focusing on walrus, and by integrating in-depth linguistic research.

151
152 Our examination of human usage of walrus has the potential to enhance regional knowledge of
153 human/marine mammal relationships, walrus, climate change, and LTK throughout the Bering Strait
154 region. Equally, as noted above, even in light of the importance of walrus and the potential impacts of
155 dramatically reduced sea ice coverage, there is still limited bio-ecological work pertaining to walrus (see
156 e.g. Fay and Kelly 1980; Fay 1982; Fay et al. 1997; Sheffield et al. 2001; Sheffield and Grebmeier 2009).
157 A number of such works stressed implicitly or explicitly a need for better understandings in light of
158 concerns about the adaptability and survivability of Pacific walrus in the face of environmental changes
159 (especially in sea ice) linked to climate change (e.g. Bluhm and Gradinger 2008, Laidre et al. 2008, Ragen
160 et al. 2008, Sheffield and Grebmeier 2009, Monson et al. 2013).

161
162 The work of Robards and collaborators (2008, 2013) attended to factors involved in variation in walrus
163 harvest rates in Bering Strait communities and argued, particularly strongly in the case of Diomedede and its
164 recent decrease in harvests, for the necessity of joining understandings of social factors alongside physical
165 ecological factors to better understand variability in harvest rates from year to year. Furthermore, the
166 work of Zdor et al. (2010) on Chukotkan indigenous LTK regarding walrus supports the argument that
167 LTK research on walrus can lend valuable information on human-walrus relationships and their
168 connections to environmental changes which speak to current scientific, management, and societal needs.

169
170 Following from this point, a second and not unrelated reason this project was initiated is that more work
171 is required towards the end of interfacing LTK and science. This has been a stated goal of the North
172 Pacific Research Board (NPRB) (2005). Using this information for educating wider audiences, such as
173 state and federal resource managers, is also crucial, given the dramatic changes occurring in the Bering

174 Strait which are bringing increased attention and non-Native human presence to the region. As Thornton
175 and Manasfi argue, northern indigenous peoples are “on the front lines of climate change,” and are
176 intimately engaged in adapting to environmental stresses and changes, as well as engaged in “shaping
177 more just and efficacious national and international climate policies based on diverse but comparable
178 local knowledge, cultural practices, and adaptation processes” (2010: 133). A review of some recent
179 work in western walrus science, policy, and management processes strengthens the argument being
180 presented here that the a stronger interfacing of indigenous LTK with these processes is critically needed,
181 as will be illustrated immediately below.

182
183 The 2011 US Fish and Wildlife Service (USFWS) Status Review for the consideration of a petition to list
184 Pacific walrus as an endangered or threatened species and to designate critical habitat (and the subsequent
185 finding of warranted but precluded status) illustrated the current level of concern about walrus in light of
186 extant and potential environmental changes. It also, however, highlighted the limitations of pertinent
187 current scientific knowledge, and revealed an inadequate consideration of the body of knowledge of the
188 one group (i.e. Alaskan Inuit people) who has successfully coexisted with the marine mammal in question
189 for thousands of years (Garlich-Miller et al. 2011, USFWS 2011). In addition to indigenous LTK and the
190 long-standing history of indigenous stewardship of marine mammal resources being inadequately
191 considered in the generation of these seminal documents, the panel of experts used in their creation did
192 not include any traditional knowledge holders. Additionally, it was disconcerting to find the USFWS
193 forwarding that, while “[t]he intensity of most stressors acting on the Pacific walrus population is driven
194 primarily by projected changes in sea-ice over time,” “[f]rom a management standpoint, managing
195 subsistence harvests for sustainability and reducing disturbance related mortalities at coastal haulouts are
196 examples where mitigation is practical and likely to be effective. In contrast, mitigating the primary
197 stressor associated with Factor A – greenhouse gas emissions – will require comprehensive international
198 agreements (e.g. Huntington 2009)” (Garlich-Miller et al. 2011: 108). Additionally, the USFWS’ (2011)
199 highlighting of other aspects of policy which impede their ability to focus more directly on the cause of
200 the walrus-related concerns (greenhouse gas emissions) also make the attention paid to concerns over
201 future subsistence harvests seem more a matter of convenience and/or a failure to adequately recognize
202 the long-standing history of Inuit walrus stewardship rather than of sound and just science and policy.

203
204 Unfortunately this approach does not seem to be isolated. A recent work by a prominent figure in Pacific
205 walrus management laid out a variety of potential future scenarios for Pacific walrus populations
206 (MacCracken 2012). This work also turned a substantial amount of attention to the subsistence harvest

207 from a management perspective. Setting aside a number of scientific problems with the analysis, perhaps
208 most concerning was the following statement:

209 The exemption of Alaskan Natives from hunting restrictions associated with the Marine
210 Mammal Protection Act currently makes implementing western science-based harvest
211 management practices problematic (Robards et al. 2009; USFWS 2011). However,
212 Pacific walrus are a candidate for listing under the ESA [Endangered Species Act] and
213 revising their status to threatened or endangered allows for the development of harvest
214 quotas. Hunters in the Bering Strait region may be the last to perceive a walrus
215 population decline because animals are concentrated within a relatively narrow corridor
216 as they migrate through the region and changes in weather patterns are also limiting
217 opportunities for hunters to observe population trends. (MacCracken 2012: 2085)

218
219 A suite of problems are evidenced in the western scientific, policy and management positions detailed
220 above, some of which have just been noted. It should also be noted that the net result of these positions
221 would be that the burden of conservation would be shifted to a people (i.e. Inuit walrus hunting
222 communities) whose activities are not connected with the etiology of the inciting environmental problem
223 (i.e. climate change), yet who ironically are the population with the long-standing history of stewardship
224 of the resource of concern (i.e. walrus). Further, it is troubling that these positions rely so heavily on
225 estimates of walrus population numbers and the effects of subsistence harvests on these population
226 numbers, both of which lack evidentiary and methodological robustness. What precipitates appears to
227 lean at best towards policy and management born of convenience whereby control is exerted upon people
228 whose activities are disconnected from the etiology of the problem but who happen to have the least
229 political power, and at worst a sort of ‘crisis politics’ where a critical situation is utilized to further a pre-
230 existing, colonial management objective. What is lost here are both just and scientific avenues whereby
231 indigenous LTK holders and their knowledge participate in the process. More robust understandings of
232 Alaska Native subsistence culture and practices which could inform these scientific, policy and
233 management discourses are missing. This includes, for example, alternative conceptualizations of
234 human-animal relationships other than the ‘dismal’ western biological one (see also Sahlins 1996), as
235 well as understandings of hunting communities as having sufficient knowledge and capacity to self-
236 regulate walrus harvests (as is evidenced by their history of having done so, in the communications
237 amongst hunting communities along the walrus migration routes, in their regular utilization of external
238 sources of relevant information, etc.). Understandings like these could correct systemic problems in the
239 western scientific, policy and management discourse, such as the overemphasis on one privileged way of
240 knowing the world. There is little reason to accord, from a logical or evidentiary perspective, the power

241 which these western approaches are afforded in these processes. For example, they are, after all, cultural
242 products of the same broader sociocultural forces and trajectories which created the potential crisis (i.e.
243 climate change and its impacts) at hand, they lack the detailed in-situ knowledge of walrus behavior that
244 their indigenous counterpart possesses, and they lack reliable understandings of walrus populations and
245 distribution yet propose using these understandings to dramatic management effect.

246

247 The need to interface LTK with science, policy, and management appears to be as dire as the conditions
248 driving decision-makers to seek that very same scientific research. When management, policy, and
249 scientific processes fail to seriously take into account indigenous LTK and culture, the results may not
250 only evidence incomplete analyses, and policy and management actions informed by them, but also a lack
251 of a sense of justice and fairness in policy and management and even a derogation of indigenous people
252 and their knowledge, rights, lifeways, and heritage of stewardship. This is one of the broader contexts in
253 which this work, as a study of indigenous LTK related to walrus, is being conducted, and it is hoped the
254 project can add to the remedying of the problems of that context.

255

256 Finally, a third reason this project was needed is that Little Diomed residents have expressed desires and
257 concerns about the need to document their knowledge and native language related to walrus, as well as
258 concerns about walrus and ongoing environmental changes, all with an awareness of a potentially limited
259 window of opportunity for working with fluent Little Diomed Iñupiaq speakers. (In fact, unfortunately,
260 four such speakers who participated in the project passed away prior to this report's completion.) This
261 project was needed to provide hunters and elders and opportunity to document and share their knowledge
262 of walruses and their social, cultural, and economic value in contemporary life.

263

264 The project was designed to address these concerns by documenting, through a multidisciplinary
265 approach, Little Diomed hunters', elders', and other experts' local and traditional ecological and cultural
266 knowledge of Pacific walrus, and to examine the cultural-ecological relationship between walruses and
267 people to document a variety of changes and adjustments in both walrus and human populations over
268 time. Among other things, this includes information about walrus abundance, health, and other biological
269 and habitat information, usage of walrus on Little Diomed Island, significance of the resource, local
270 management practices, and other information about the ways walrus remain crucial to the subsistence
271 lifeways of the community. A more specific elaboration of the objectives of this project are detailed in
272 the following section of this report. Some of the hypotheses and research questions which were initially
273 suggested for this project included the following:

- 274 • Systematic collection of traditional information from residents of Little Diomedede can provide
275 information regarding Pacific walrus such as: distribution, abundance, and/or availability of
276 walrus relative to ice conditions and time of year; overall health, and other indices to population
277 status; food habits; changes over time to all of the aforementioned variables; and changes in historic
278 harvest levels that may have been interconnected with changes in the socioeconomic conditions and
279 subsistence lifeways of Little Diomedede.
- 280 • What do hunters and elders know about walrus in the areas they encounter them?
- 281 • What can LTK highlight in regard to historical observations of walrus, hunting, environmental
282 phenomena, the relationships and variability with and between these factors, and their
283 interconnections with sociocultural adjustments?
- 284 • What are the linkages between recent, ongoing, and historical human community adjustments
285 related to environmental and non-environmental variability?
- 286

287 **Objectives**

288 This project had two main objectives.

289

290 Objective 1

291 The first objective was to employ a multidisciplinary approach which would contribute to bio-ecological
292 and anthropological knowledge of walrus, addressing both a need to supplement current limited
293 knowledge about walrus as well as a need to interface LTK with scientific processes. Specifically, this
294 objective was to be met through documentation and examination of human-walrus sociocultural and
295 ecological relationships on Little Diomedede Island, including an attention to changes and adjustments in
296 this relationship and related variables over time.

297

298 To address this objective, project staff from multiple disciplines (anthropology, linguistics, archival
299 research, and marine mammal biology) collected data from ethnographic and linguistic interviews with
300 Diomedede walrus experts as well as from archival sources. Additionally, relevant data from two other
301 current Kawerak projects (on ice seals and walrus, and on ocean currents) were incorporated into this
302 project's data for analysis. In total, over 50 interviews from 19 experts conducted over a three-year
303 period, in addition to the archival materials, were synthesized to produce this report. Extensive data was
304 collected on the Little Diomedede Iñupiaq Eskimo language related to walrus, on historical data relating to
305 Diomedede and walrus, and on information from contemporary experts relating to walrus abundance, health,
306 behavior, habitat, migration, relationship to environment, hunting, uses, and their importance and
307 integration into Iñalut society and culture.

308 In this report, data collected pertaining to these topical areas are discussed in detail in the Results section,
309 and this material is analyzed and discussed in terms of key elements of its epistemic and social context in
310 the Discussion section. Key contributions from this project's work in this regard are: 1) the uniqueness of
311 its synthesis of this particular data in one work, 2) the portrait provided of the ecology of change relating
312 to walrus and Diomedes presented herein, 3) the explication of the value of Diomedes traditional
313 knowledge relating to these topics for management, science, society, and our understanding of Diomedes
314 society, culture and history, and 4) the support this work provides for ongoing educational and cultural
315 heritage activities in Diomedes and the region as a whole. Implications and potential suggestions stemming
316 from this analysis are discussed as well in the Management or Policy Implications section of this report,
317 which highlights in particular the value of Diomedes traditional knowledge to broader society, policy and
318 management, science, existing knowledge, and the environment, as well as particular areas where this
319 traditional knowledge and other issues addressed by Diomedes experts have bearing on contemporary
320 policy and management.

321

322

Objective 2

323 The second objective was to address Little Diomedes residents' desires and concerns about the need to
324 document their knowledge relating to walrus, as well as concerns about walrus and environmental change
325 (all of which was against a backdrop of a possibly limited window of opportunity for working with fluent
326 Little Diomedes Iñupiaq speakers). Additionally, the project also aimed to produce products which spoke
327 to these concerns and were of value and utility to the study community and other region communities, e.g.
328 for educational and cultural heritage purposes.

329

330 This objective was meant to dovetail with the first objective. That is, the documentation of Little
331 Diomedes LTK regarding walrus was intended to not only contribute to scientific knowledge and to
332 interface LTK with science, but it was also intended to meet a community need for the documentation of
333 such knowledge and the generation of materials of utility to the community with regard to this topic. The
334 research design of the project was indeed based on interfacing LTK and scientific knowledge through a
335 multidisciplinary approach grounded in a strong relationship with the participating study community. As
336 such, the means by which Objective 1 were met are also relevant to how Objective 2 was met. Through
337 ethnographic and linguistic interviews, knowledge about Little Diomedes human-walrus relationships was
338 documented in both English and Iñupiaq. Additionally, archival research was conducted which resulted
339 in the collection of historical information related to these Little Diomedes human-walrus relationships.
340 The results of all of this data collection - ethnographic, linguistic, and archival - are discussed at length
341 further below.

342 Additionally, the educational and outreach components of this objective were also met through a number
343 of means. All of the data collected for this project has been systematically organized, consolidated and
344 delivered to the Eskimo Heritage Program (housed at Kawerak, Incorporated in Nome) for the long-term
345 benefit of the region. Two community meetings were also conducted in Little Diomedes to discuss the
346 project and to solicit community feedback on the work, as well as a community meeting with Ingalit living
347 in Nome. Additionally, the three appendices to this report include three products in addition to the main
348 body of this report which are anticipated to be of significant community value. The first is a glossary of
349 Little Diomedes Inupiaq walrus-related terms assembled through the linguistic work conducted for this
350 project. The second is a guide to methods for walrus preparation (for consumption) as elicited in the
351 ethnographic interviewing with a Little Diomedes resident who was an expert in these matters. Finally, the
352 third is a poster which the Native Village of Diomedes may display in public places which illustrates the
353 importance of walrus to the village, drawn from information collected in this project. Additionally, the
354 first two appendices are being made into a separate booklet. This final report and the booklet are being
355 distributed to every household in Diomedes as well as to the Native Village of Diomedes (tribal council),
356 Diomedes school, and each of the other region's tribal councils and schools. The poster is being
357 distributed to the Native Village of Diomedes and the Diomedes school. The report, booklet, and poster
358 will also be available to the general public on the Kawerak Social Science Program's website at
359 <http://www.kawerak.org/socialsci.html> .

360

361 **Methods**

362 This project was conducted with the prior consent of the Native Village of Diomedes Tribal Council as
363 well as individual project participants. A letter of informed consent was sent to the Tribal Council
364 requesting permission to conduct the research via tribal governing resolution, and a resolution was
365 received from the Tribal Council. A list of experts was solicited from the Tribal Council for possible
366 participation in the project as interviewees. Participation in the research was completely voluntary;
367 individuals were given the opportunity to decline to participate without negative consequence, or to
368 decline to continue participation at any time during the research. Each interview participant signed a
369 written consent form prior to their participation in the project. Honorariums were paid to interview
370 participants and door prizes awarded to participants in community meetings.

371

372 Archival research was conducted at Kawerak's Eskimo Heritage Program in Nome, Alaska. These
373 archives contain audio, video, and written records on each community in the Bering Strait region which
374 Kawerak serves. Research was conducted on these archives by Kawerak staff for materials relating to
375 walrus and Diomedes.

376 Linguistic interviews were conducted by Dr. Lawrence Kaplan (a linguist and specialist in Iñupiaq
377 Eskimo research), and also by Eva Menadelook (former Eskimo Heritage Program Specialist) and Gay
378 Sheffield (marine mammal biologist, currently with the University of Alaska Fairbanks SeaGrant
379 Program’s Marine Advisory Program). Fifteen interviews were conducted with nine Diomedé language
380 experts on Little Diomedé Island and in Nome over a three-year period. Kawerak Social Science
381 Program intern Meghan Topkok worked with Dr. Kaplan to produce Appendix 1 of this report, a glossary
382 of Little Diomedé Iñupiaq walrus-related terms.

383

384 Semi-structured ethnographic interviews were conducted by Brenden Raymond-Yakoubian
385 (anthropological contractor to Kawerak), Eva Menadelook and Gay Sheffield. These interviews were
386 conducted over a three-year period, and included two separate trips to Little Diomedé as well as
387 interviews with current or former Little Diomedé residents living in Nome. A total of 21 ethnographic
388 interviews were conducted with 15 different experts under this project’s activities. All of this project’s
389 interviewees were either adults or elders. Eleven interviewees were men and four were women.
390 Interview topics included walrus health, behavior, population, habitat, relationship to environmental
391 factors and elements, walrus hunting processes, hunt timing and location, hunt abundance, hunting
392 challenges, uses of walrus, preparation and storage of walrus-related products, gender differences in
393 involvement with walrus, the teaching of local practices to young people, stories about walrus and walrus-
394 related topics, walrus-related rules and taboos, community activities related to walrus and walrus hunting,
395 views on walrus-related policy and management, and the importance and significance of walrus and
396 walrus hunting to Diomedé people.

397

398 Two other current Kawerak Social Science Program projects contributed data to this project: the
399 *Community-Based Documentation of Ice Seals and Walrus* project, and the *Indigenous Knowledge and*
400 *Use of Ocean Currents in the Bering Strait* project. Seventeen ethnographic and mapping interviews
401 conducted by four Kawerak Social Science Program staff with 13 experts involved in these other
402 Kawerak projects contributed data to this project.

403

404 Two community meetings were held in Diomedé, one in 2012 and one in 2014, as well as one meeting in
405 Nome in 2014, to solicit community feedback on project research, its progress, and its products. The
406 feedback from the Tribal Council, community, and from participants in the project has been incorporated
407 into all final products for this project. In total, over 50 ethnographic, mapping, and linguistic interviews
408 with 19 experts during the course of three social science projects contributed to the data which is
409 presented in this report.

410 Data analysis was conducted through the creation of codes, based on interview guides and interview
411 content, and the coding of the data collected for the project through ethnographic, linguistic, and archival
412 research. This data was organized by code, summaries were created for topics of data discussion and
413 analysis, and the data was finally synthesized and analyzed to produce the project's report, which was
414 reviewed by project staff, other Kawerak staff, the Diomedes Tribal Council, and project participants, with
415 appropriate revisions being made in light of these reviews.

416

417 **Results**

418 Spatiotemporally (and especially spatially) specific data and discussion will not be addressed in detail
419 below, as this type of data is a main focus of two other ongoing Kawerak projects: the *Community-Based*
420 *Documentation of Ice Seals and Walrus* project, and the *Indigenous Knowledge and Use of Ocean*
421 *Currents in the Bering Strait* project. Therefore, for example, specific locations, routes, migration timing,
422 habitat locations, harvest locations, walrus feeding locations, ice movement, ocean current locations, and
423 so on - and their spatiotemporal interconnections - will not be discussed in great detail below, and the
424 reader is referred to the products from these other related projects for this information (see e.g. Kawerak
425 2013a, 2013b, 2013c, 2013d, Oceana and Kawerak 2014, and J. Raymond-Yakoubian et al. 2014).

426

427 **Differentiating Walrus**

428 A number of differentiations amongst walrus were identified by project participants. Pacific and Atlantic
429 walrus were identified as two separate kinds of walrus. The walruses which are on the Russian and
430 Alaskan sides of the Bering Strait were identified as the same; one interviewee stated that the walrus
431 which Canadian hunters harvest are smaller.

432

433 In terms of Pacific walrus, the walrus with which Inupiat interact, a number of further distinctions are
434 acknowledged as well. Gender and age delineations with the most importance ascribe differences
435 between males and females, baby walruses (calves), mothers, pregnant females, young females and young
436 bulls with small tusks.

437

438 One key distinction amongst the Pacific walrus population made by interviewees was to distinguish
439 "green palms" (or "green flippers") walrus from others. These walruses have green flippers (and some
440 also noted green lips), which was largely attributed to their having spent a substantial period of time on
441 rocks with algae. These walrus were seen as participating in a separate, later migration from the other
442 Pacific walrus which pass by Diomedes with the ice (and water) going north in the spring. The location of
443 the primary southern habitat of these green-palmed walruses was variously speculated on as being Round

444 Island, the Aleutian Islands, the Pribiloff Islands, or an island or islands in the vicinity of one of those
445 areas. Some interviewees noted, however, that they are the same kind of walrus as the others, and one
446 said they even taste the same. Some interviewees identified them as being larger than the walrus which
447 migrate earlier in the spring with the ice, and while two interviewees suggested they were not seen
448 anymore or as regularly anymore, others seemed to indicate they are still a regular feature of the annual
449 migration past Diomedes.

450
451 A number of interviewees also singled out walrus which kill and eat seals as an important subtype of
452 walrus. Some interviewees identified these walrus as being larger, even much larger, than other walruses,
453 and as having tusks stained yellow from the seal oil. A number of interviewees discussed that these
454 walruses somehow cut the seals' skins in a manner which looked like cuts from a knife. Some
455 participants suggested that Iqalit did not hunt these walrus, but others did not seem to agree.

456
457 Walrus Population

458 Many interviewees expressed the view that Iqalit are seeing less walrus now than in the past. However, it
459 is unclear what this is seen as being indicative of. With a number of interviewees, it is not clear which
460 view they hold on this matter, if they hold one at all. Additionally, a number of possible explanations are
461 suggested by other interviewee responses, such as:

- 462 • The possibility that the total walrus population has decreased, e.g.: “[T]here’s less walrus man, I
463 know that” (Iyapana 2012b).
- 464 • The population has moved to other areas, e.g.: “This year, well I guess because of the ice condition
465 now [...] maybe, maybe they go over on Russia side but not too much over on this side because of
466 the [ocean] current pattern.” (E. Soolook 2012b).
- 467 • Environmental variability leading to a perceptual change: “Or not mean less but it’s just, maybe
468 that’s why the weather’s always bad too and they’re traveling in the bad weather and they’re
469 already traveling up north or they’re already down south.” (E. Soolook 2012b)
- 470 • Population density has changed, e.g.: “The herds at this time seem to have lessened” (A. Kunayak
471 and G. Iyahuk 2012b)
- 472 • Changes in hunter behavior, e.g.: “Andrew: Now, as I think of it; at this time, it seems as though the
473 walrus herds are less around Little Diomedes. Those who hunt do not give reports of seeing walrus
474 on scattered ice at this time. Glen: Because they don’t boat [around the island].” (A. Kunayak and
475 G. Iyahuk 2012b)
- 476 • Multiple causes are involved, e.g.: “Interviewer: Do you think they’re dying? I mean that there’s
477 just less of them or they’re in different places? Jerry: Both.” (Iyapana 2012b)

478 As will be discussed later, a number of interviewees detailed changes to the ice conditions that have been
479 observed in the lifetime of Diomedes hunters, such as the ice becoming thinner, there being much less old,
480 thick ice and large icebergs now and more young ice, that (young) ice crumples up now more than ice did
481 in the past, and that ice is coming later and breaking up sooner. And, as many interviewees noted, walrus
482 and ice conditions are intimately linked. A number of experts also drew connections between walrus
483 populations and ice conditions.

484
485 It was frequently noted by interviewees that herd size has decreased over the lifetimes of hunters. It
486 appears to have been common in the past to see much larger herds of walrus on the old, thick, large ice,
487 and that owing to a dramatic decrease in this type of ice, the herds of walruses are fewer in number and/or
488 size. Additionally, other stories were recounted of very large, seemingly endless, herds of walrus being
489 seen - including in the water - passing near Little Diomedes, that simply are not seen in more recent times.

490
491 For some, these changes to ice conditions are an ominous portent: “Pretty soon there’ll be no more
492 walrus” (A. Ahkinga 2012). For others, however, things are not so bleak:

493 Patrick: Our resources, the walrus, will never be gone or finished. The white people say
494 the ice is melting. Right now, at this time, we are not concerned or worried about the
495 walrus. The walrus will not be gone for, maybe, for so many years. For future generations
496 it may be different. The people that are making decisions about walruses and the
497 regulations are just hurting the Eskimos that depend on the walrus for food. These people
498 who make our regulations have their food from the land. For us it is hard. Just like the
499 walrus will never be gone. There is lots of it right now. James: There is lots of it right
500 now. Patrick: Right now there is lots of walrus. It will never be gone. James: Long time
501 ago there was thousands of them. Patrick: Also the polar bear. The ice, the white people
502 are concerned about this, at this time it is not a hardship. James: White people are too
503 concerned about the ice, but it will not melt right now. It will not melt for so many years
504 yet. And the walrus will never be gone. We grow up with it. It will never be gone. The
505 walrus meat hasn’t really changed. The tusk is also used for carving and traded at the
506 store because we didn’t have any food stamps, welfare, and they didn’t have any jobs.
507 Also for centuries the walrus was our food on the island. (P. Omiak and J. Omiak 2010a)

508

509 Walrus Behavior and Interaction with the Environment

510 This subsection covers a large array of data, including: walrus personhood and other behavioral
511 characteristics; walrus sociality (amongst walruses, between walruses and humans, and between walruses

512 and other animals); walrus, ice, currents, weather, and climate; walrus migration; walrus and haulouts;
513 walrus and other habitat considerations; walrus diet and feeding.

514

515 *Walrus Personhood and Other Behavioral Characteristics*

516 One important observation that came out of the research for this project is that amongst Injalit people there
517 are views about the nature and behavior of walrus that are markedly in contrast to western views. There
518 are also views which are similar to western views. For example, some interviewees described walrus in
519 ways that can be considered as constituting personhood. Additionally, it seems that there may be varying
520 definitions of what constitutes “behavior,” some of which may be at odds with standard western
521 definitions used either explicitly or implicitly in biological research. This strongly suggests that western
522 walrus researchers should be attuned to these issues as they highlight ways in which particular cultural
523 beliefs and assumptions underlie analyses, and call for a critical and reflexive understanding of these
524 beliefs and assumptions and their impact on these analyses (e.g. on their “objectivity” and truth value).

525

526 Interviewees who discussed the matter explicitly seemed split over whether walrus behavior has changed.
527 Two interviewees felt that it had. One interviewee noted that walrus do not come around like they used
528 to, and are afraid, either because perhaps they may want to be on their own, or because of changes in the
529 marine environment. Another interviewee noted that you used to see walrus playing around but not now
530 (though he said this may be because of weather and people simply not being able to see it now); he also
531 stated that they look more tired now, and some are quite pale; some tired walrus will just stay in the
532 current to keep themselves afloat. One elder stated that their behavior had not changed, and that they
533 behave now as they did in the past. Two other elders also held this belief, as noted in this excerpt from a
534 joint interview:

535 Patrick: The behavior of the walrus has not changed to my knowledge. James: It will not
536 change. Patrick: The behavior has not changed. James: It will not change. Patrick: Only
537 the ice and current. It is due to the current. James: The weather has changed. (P. Omiak
538 and J. Omiak 2010a)

539

540 Interviewees were also split as to whether they believed walrus were similar to human beings. One noted
541 that they were like people, but more aggressive; he also said they have spirits and feelings. Another
542 interviewee stated that animals can sense things, have feelings (he had seen them cry as well), and know
543 more than people give them credit for; he stated that his grandfather told him to have respect for animals.
544 Two other interviewees noted that they were not like people and were different, and another stated that
545 they had their own way of life, though he was not sure if it was similar to that of humans.

546 All interviewees who commented on the matter stated that walrus were smart. Two who stated this also
547 noted, however, that walrus do not know or are not aware of what humans are doing. A number of
548 interviewees, however, did expand on some things they felt walrus were knowledgeable about. One
549 stated that walrus may know if people are being wasteful, and if so would come around less. Another
550 stated that walrus know if another walrus gets killed or hurt, that they can sense when they will die, that
551 they can sense if a hunter is thinking too much about their prey (or are being greedy) or if they are not
552 being that way, and that walrus will come to a hunter if you are just being natural; he was of the view that
553 animals give themselves to the hunter. Another interviewee concurred with the view that walrus give
554 themselves to hunters, saying they make a decision to do that. One interviewee stated that walrus have
555 knowledge of human behavior; they are able to tell the difference between polar bears and humans. One
556 hunter noted that walrus would not know if a hunter was wasteful, but that a wasteful or disrespectful
557 hunter might find less success (when pressed for a reason, he argued that there is more to this world than
558 we can see). When asked, an elder was also of the view that walrus would not know if hunters had been
559 wasteful; he also stated that only whales give themselves to hunters, not walrus. Two other elders noted
560 that walrus know things, and one noted that you cannot “play around” with them.

561
562 Some other characteristics and behavior pertaining to walrus which were noted by interviewees was the
563 view that they have good senses of smell and hearing but poor eyesight, and that they scare easily and are
564 sensitive to noise. Their good sense of smell dictates particular hunting strategies to avoid being detected.
565 One interviewee noted that walrus have breathing holes like seals. Two interviewees discussed walrus
566 who cry, wipe their eyes, and call out (these are to be left alone), walrus that lay on their backs, and
567 walrus that dance (they have a dance, and they are to be left alone when dancing); walrus who click their
568 teeth, which they will do loudly, are also to be left alone.

569

570 *Walrus Sociality*

571 Two elders stated that walrus have their calves in May and June, on the ice. One hunter noted that this
572 takes place where there is no danger; this hunter also guessed that walrus mated in February before
573 migrating south. Another hunter noted that when walruses hear mating sounds, they turn upside down,
574 clatter their teeth, and make a sound from inside their air sac.

575

576 In terms of interactions with humans, a number of interviewees pointed out that young walrus (young
577 bulls in particular were sometimes singled out) with small tusks are aggressive. It was stated that they
578 guard the herd, mothers, and the elderly; that they will act as a lookout and alert the herd if they sense
579 hunters; that they will attack hunters’ boats; and that they will continue to attack even when shot at, only

580 stopping when killed. Other interviewees noted that you could put a paddle into the water alongside the
581 boat and this will scare off walrus, as they believe it to be a killer whale. One interviewee noted that
582 female walrus may also attack boats. It was also noted that when in a group, females will protect all the
583 young walrus. One interviewee stated that you should leave walrus alone when there are too many in
584 the water, as that was a dangerous situation. One elder also noted that walrus who were up north would
585 come down off the ice when shot at, but would always climb back up when the shooting stopped; it only
586 happens with walrus up north, and he did not know why.

587

588 Some walrus are carnivorous and will eat seals; these walrus have yellow tusks from the seal oil. They
589 are also able to cut the skin of the seal very thin. A number of interviewees discussed how killer whales
590 will attack walrus, and that walrus are afraid of them. Walrus will flee killer whales and will even climb
591 out onto land to escape. Injalit have traditionally been told by their elders to not disturb killer whales, and
592 that if they do not disturb them, the killer whales will give people a share of their catch; if, however, one
593 hurt or killed them, the killer whales will go after the person who did that.

594

595

Ice, Currents, Wind, Weather, Climate

596 The relationships between walrus, walrus hunting, and ice, ocean current, wind, weather and climate
597 phenomena and systems are clearly highly interlinked based on the information received from project
598 interviewees. Systemic historical changes are also evident and significant amongst these
599 interconnections.

600

601 Interviewees conveyed numerous aspects of the importance of ice to walrus. Calves are born in May and
602 June on thick ice, and breeding occurs near older, thick ice as well. Most interviewees stressed how
603 crucial ice was as habitat for walrus - for example, that walrus preferred to be on the ice to being in the
604 water, that walrus needed large, thick, dense ice to haul out on to rest (and even moreso in large
605 numbers), and as an integral part of the system of ice and currents on and with which walrus migrate.
606 However, it was also noted, to a lesser degree, how walrus can and do live and survive (to varying
607 extents) without ice; one interviewee even forwarded the argument that walrus would be able to manage
608 without ice as they are very adaptable.

609

610 Interviewees consistently noted that the ice conditions have changed substantially within the past 50 or so
611 years. The ice is thinner now, and melts, breaks up, and goes away sooner and/or quicker, and is also less
612 stable. The ice now is almost entirely 'young ice' as opposed to old, thick, dense ice. Young ice is
613 formed more by the colder conditions of the particular winter season. Old ice used to be thicker and

614 could form into large ice cakes and icebergs. Old ice could also have a blue color because it contained
615 freshwater (which could be used for drinking). This thick ice was capable of supporting large numbers of
616 walrus; this is not reported to be seen much if at all anymore. Walrus will still go up on good ice if they
617 are able to find it, and were reported to also be seen on tall ice as well.

618 Alois: There is no more ice that has water in it anymore. James: The ice has changed.
619 There is no more good ice. Alois: Yes, yes. The world has changed. (P. Omiak et al.
620 2010b)

621 It was noted that the spring break-up of ice is occurring much sooner and/or quicker now. Walrus were
622 noted to be around and migrating northwards earlier and quicker during the spring; this also has effects on
623 the timing of the spring hunt. Spring walrus were reported as being seen near Diomedes as early as
624 February, and June hunting was reported as being nearly a thing of the past. The normal period, at least
625 in the past, for the spring migration was between April and June, mainly in May. Additionally, it was
626 noted that walrus appear to be migrating through different areas than in the past, and that people have to
627 go further to harvest walrus than they used to. Most of the data, though not all, seems to point to a view
628 of the fall/winter freeze-up happening later and possibly the ice moving southward later as well. Most of
629 the data (though not all) also indicates the view that walrus are, however, migrating south in the fall
630 sooner than in the past, as early as August (in the past, it appears the most normal time was October),
631 though the range of times given varied quite widely from August to December.

632
633 A number of interviewees pointed out that changing ice conditions have made hunting more difficult. It
634 is important to note that, in regard to ice conditions as well as the other environmental factors discussed in
635 this section, there was variability in the responses of project interviewees and, additionally, several
636 interviewees noted that there was variability (sometimes patterned) in one or more conditions from year
637 to year.

638
639 As one interviewee noted, changing ice conditions may play a role in assessing population numbers. As
640 will be demonstrated throughout this report, there were varying views forwarded by study interviewees on
641 walrus population numbers (whether or not they are decreasing, and what any changes - if any - in visible
642 numbers are caused by - e.g. real declines, populations moving to other areas, changing hunting practices,
643 etc.), and the conditions of the ice - and changes to it - are one key environmental factor among others
644 (e.g. changes in weather) impacting any such assessments. For example, the possibility that apparent
645 lower walrus numbers could be explained at least in part to walrus being more dispersed as a result of the
646 diminishing amount of thick ice cakes (which used to support large numbers of walrus) was mentioned by

647 a number of interviewees in this project and a concurrent Kawerak project (J. Raymond-Yakoubian et al.
648 2014).

649

650 Ice conditions, then, are quite important for walrus and walrus hunting in the views of study interviewees.
651 One local expert succinctly noted broader ice-related conditions and factors and their bearing on
652 subsistence in general:

653 Frances: [I]t seems like later now with our ice, we don't get ice as early as October any
654 more. It's later now and it goes away - from what I see the past few years - a lot sooner.

655 And the pattern of the ice too has some effects with our subsistence. How it comes in, is
656 it young, is it old [...]. Sometimes it's hard for them to go and get seals due to our ice

657 conditions. Is it gonna be safe enough. [A] lot of the elders do relate ... we don't got
658 that older ice anymore, with the icebergs. Lot of the young ice form here and thickens, so

659 it's not as strong as the one we get from up north. We do see them from up north, they
660 just ... the current takes them down south and it's back up again, goes back and forth,

661 before it gets stuck here in Diomedes. But not all of it's ... most of it's young ice.

662 Interviewer: And how does that affect the animals or the hunters? Frances: It makes a big
663 change, depending on how it comes in and how it's formed due to the weather. It's gotta

664 be cold. The current ... is the current strong or weak. 'Cause we have different ice
665 pressure buildups every year. We expect them, you know, to be similar but it's always

666 been changing. Since I recall, and I've been here for a while. (Ozenna 2011b)

667

668 The above comment, among other things, also points to the importance of considering the
669 interrelationships between the ice system and other environmental systems, a fact that a number of

670 interviewees addressed. In particular, ice, ocean currents, wind, weather and climate were understood as
671 being highly interlinked in terms of the lives of walrus and the conduct of walrus hunting. A number of

672 interviewees highlighted the importance of knowing about wind relating to the movement of ice, game,
673 and the conduct of subsistence activities. For example, one study participant noted that a west and

674 southwest current will bring the ice, and thus the game, over towards Diomedes. Changes between
675 systems are also interlinked; for example, one study participant noted that "[the ice is now] thinner.

676 Don't see real big icebergs no more like I used to when I was a kid. And the ice used to be flat a lot
677 because the weather was more steady north wind" (Iyapana 2011).

678

679 Weather patterns and broader climatic changes were linked by interviewees to these other factors as well.

680 In general, a number of interviewees noted that another significant general trend along with thinning and

681 more rapidly melting sea ice within the past 50 years has been substantially worsening, more rapidly
682 changing and increasingly unpredictable weather, which can significantly impair subsistence activities,
683 decreasing the number of days during which hunting can take place and the length of time out on the
684 ocean a hunt can last, reducing the visibility of ocean conditions, changing the calculus about where
685 hunters may travel and how they must spend their time and focus their attention when out hunting, and
686 increasing safety concerns for hunting activities. One interviewee noted that marine mammals have
687 knowledge about the weather, and another study participant stated that the walrus, in the changes
688 evidenced through them, are “telling us something now. They’re telling us. Earth is changing. They’ll
689 tell you. The animals will tell you. You just gotta listen. [...] You gotta listen real careful” (J. Ahkvaluk
690 2011). This interviewee also noted the possibility that walrus were confused by changing ice conditions.
691 Additionally, an interviewee in a concurrent Kawerak project on indigenous knowledge and use of ocean
692 currents (J. Raymond-Yakoubian et al. 2014) also noted that perhaps the changing abundance of walrus
693 near Wales (where this interviewee is from) owes to walrus themselves being confused by changes to the
694 weather.

695
696 While some interviewees noted caveats to the above-discussed patterns, such as year-to-year fluctuations
697 in environmental patterns, the patterns discussed above appeared to have been held by experts consulted
698 on these matters for this study. A number of interviewees connected changes in several of the above-
699 noted systems - including ice behavior and walrus habitat and migration - to global warming. Another
700 interviewee, when asked what was causing the changes to ice and ocean currents he had mentioned, stated
701 that it was caused by “[p]eople. We’re the guilty ones. People. Too many” (Ahkinga and Ahkvaluk
702 2012).

703
704 This brings us to the fourth major environmental factor discussed by project participants with regard to
705 walrus and walrus hunting alongside ice, weather/climate, and wind, and that is ocean currents, which
706 were discussed perhaps the most of all other factors in their connection to the ice. One interviewee noted
707 that “[w]hatever is out there, it [...] impacts us, hunting-wise. That’s why we rely on the currents, we rely
708 on the wind, the weather. We see how it looks at first” (R. Soolook 2012a). Ocean currents and ice
709 movements were described as the two environmental pathways - most often together, though potentially
710 separately (e.g. in the case of walrus traveling in the absence of ice) - crucial to walrus migration. The
711 relationship of ocean currents to the migration of walrus was described in ways indicating interviewees
712 saw it as important to walrus on the whole as ice is. The migration of the marine mammals Diomedea
713 encounters is seen as happening with the currents and the ice (though, as noted earlier, it may occur
714 somewhat independently of the ice given that walrus can swim for quite a ways without ice). It was also

715 noted that walrus will use ocean currents as areas for feeding. Currents also factor into walrus hunting
716 decisions as well, such as in understanding where game will be, what areas to avoid, and how and
717 whether to use and navigate particular currents in boats during harvest activities. Most interviewees noted
718 that the ocean currents had changed over the years; some argued they were moving faster, others stated
719 they were dying, and still others simply noted that they had changed their behavior from earlier times. As
720 noted earlier, Kawerak has conducted a separate extensive study on indigenous knowledge and use of
721 ocean currents in the Bering Strait region, and Diomedes was one of the participating communities in that
722 study (J. Raymond-Yakoubian et al. 2014).

723

724

Walrus Migration

725 A concurrent Kawerak project on ice seals and walrus included research with Diomedes and contains more
726 detailed information pertaining to walrus migration than that which was focused on for this project; the
727 reader is encouraged to pursue that project's material if interested in this topic (e.g. Kawerak 2013b,
728 Oceana and Kawerak 2014).

729

730 There are two separate migrating populations of walrus which constitute the migration that passes by
731 Diomedes traveling north in the spring and south in the fall. The first group in the spring comes up with
732 the northerly-moving ice. The walruses which have green flippers are the last group in the spring, coming
733 after the others, at the end of the spring migration. There was not as much discussion amongst
734 interviewees of the order of migration of green flippers in the southward fall migration in comparison to the
735 other walrus group, though one interviewee indicated that the green flippers were the first to migrate south
736 in the fall.

737

738 The spring walrus migration of walrus heading north would normally run from late April through June.
739 However, interviewees indicated this timing was changing to earlier and/or quicker. This change is an
740 apparent accompaniment to the changes in ice break-up, which was reported to similarly be happening
741 earlier and/or quicker in the spring. It was noted that June hunting is essentially a thing of the past now,
742 and that walrus had recently been harvested as early as February and March. The order of the migrating
743 animals are generally whales, seals, and walrus (though seals can migrate both before and after walrus).
744 Of the walrus, females with calves come up first, sometimes with some males interspersed, followed by
745 the males. The order is repeated during the fall, when walrus head south. Hunters did not report seeing
746 calving, and it was stated to occur prior to and away from the migration through their hunting area; one
747 interviewee noted that umbilical cords were still present when they were out on the spring hunt. Most,
748 though not all, of the data used for this project indicates that hunters felt that the southward movement of

749 ice, and the period of freeze-up, were coming later in the fall/winter than in the past, while the southward
750 migration of walrus was coming earlier. A range of August to December was given for the current
751 migration period (with a slight favoring of August, September, and October), whereas in the past the data
752 appears to indicate October was the norm for the migration of walrus past the Ijalit hunting area. This
753 migration occurs ahead of freeze-up.

754

755 Walrus migration was reported to be associated with the movement of ice, and perhaps even more
756 importantly and necessarily, tied to the flow of ocean currents. Walrus will migrate on the ice, in the
757 water, and both in the presence of ice as well as without ice. In the spring, walrus mainly migrate with
758 and after the northerly-moving ice, and in the fall, walrus mainly migrate before and with the southerly-
759 moving ice and ahead of freeze-up. It was suggested by a number of interviewees that walrus are
760 migrating through different areas than they used to be, perhaps as a result of changing ice conditions.
761 Additionally, wind patterns are highly important in terms of where walrus migrate; wind can push ice in
762 particular directions and also change the direction of ocean currents.

763

764 Herds that are migrating currently appear to be less numerous, as has been indicated elsewhere. There is
765 no set pattern to the migration, as walrus follow the currents and ice. Walrus migrate throughout the span
766 of the Strait. Interviewees had varying opinions about whether walrus were around in winter, ranging
767 from answers of 'no' to 'rarely' to 'currently but not in the past'. Some walrus do stay around in the
768 summer, and will haul out regularly on Big Diomedes, for example; it was suggested that it was mostly
769 bulls who stayed around in the summer, but that in the winter the walrus which were seen could be
770 bulls, females, or calves. One interviewee also stated that it appeared walrus knew about the
771 international border, using it for protection from being hunted.

772

773

Hauling Out, and Other Habitat Notes

774

A number of observations pertaining to haulouts were made by project interviewees:

775

- During times when they are hauled out, walrus will also make forays into the sea for feeding.

776

- Hauling out gives walrus an opportunity to rest.

777

- Walrus will haul out when killer whales come around.

778

- Walrus can climb up quite high on the land.

779

- Little Diomedes regularly has haulouts, but one interviewee noted that it had recently occurred two years in a row, the only time which this had occurred in her memory.

780

781

- Diomedes people will generally leave walrus alone when they are hauled out.

- 782 • Walrus regularly haul out on Big Diomedes in the summer every year, though one interviewee
783 indicated that this only started in the past 50 years or less and that it did not used to be a haulout
784 location.
- 785 • One elder indicated that their ancestors had told them in the *qagri* (a traditional Eskimo community
786 house) that walrus would climb onto the land when there is no ice.
- 787 • Walrus will haul out on Fairway Rock, but this is more infrequent than hauling out on Little or Big
788 Diomedes Islands.
- 789 • Some interviewees said that walrus haulout locations have changed, whereas others said the
790 opposite or did not note anything regarding this either way.
- 791 • There can be a lot of walrus in the water when there is a haulout.
- 792 • There may be an increase or change of hauling out activities on Little Diomedes more recently.
- 793

794 More detailed information about haulout locations was documented in a concurrent Kawerak project on
795 ice seals and walrus, a project which included Diomedes (Kawerak 2013b).

796

797 It was indicated that walrus can be seen at any time of year around Little Diomedes. Walrus staying
798 around the area in the summer may have been left behind from the spring migration, and may be mostly
799 bulls, and there may be more now than in previous times. Most walrus go up north in the summer.
800 Additionally, there may be more walrus being seen more recently in the winter (the vast majority of
801 walrus having gone south during the winter); it is unclear whether, if this is the case, this owes more to an
802 increased occupation of this area during this time or to earlier migration of animals during the
803 traditionally spring migration north. One interviewee indicated that those which are being seen in winter
804 are mostly bulls. Several interviewees indicated changing peri-Island patterns between sex and
805 spatiotemporal distributions, though there was insufficient data and consistency on this matter to make
806 firm pronouncements.

807

808 *Diet and Feeding*

809 Clams were identified by all respondents as the main food source for walrus. While some interviewees
810 stated that clams were the walrus' only food source, most stated that clams are simply the main food
811 source, and some noted other food sources in addition. One interviewee noted that while walrus mainly
812 eat clams, they will eat whatever they can find. A number of interviewees noted that some walrus eat
813 seals. One interviewee stated that he has found a number of things in the walrus stomach other than
814 clams (including a few sea peaches), but did not know what they all are. Another interviewee noted that
815 they also seem to eat small rocks. One interviewee noted that the walrus he catches from around the

816 Diomedede area have in more recent times had nothing in their stomachs, which was a change from in the
817 1960s and 1970s.

818

819 One hunter noted that the walrus go with the ice and will feed at the same time, and that they are
820 continuously feeding. Interviewees discussed a number of areas near Little and Big Diomedede islands that
821 they have noticed walrus utilize for feeding on clams (see also Kawerak 2013b). As one hunter noted,
822 clams prefer the sand to boulders, so walrus can be found feeding wherever the sand is. Feeding areas
823 were seen as predicated on being clam habitat. Walrus will also rest on the Diomedede islands and feed on
824 the clams in the nearby areas. Two types of clams were identified around Little Diomedede which walrus
825 feed on.

826

827 An important point to note is that the clams from walrus stomachs are considered an important
828 subsistence item for Iqalut. People will get the clams from the stomach, which are not yet digested, and
829 then are able to eat these clams themselves. One is supposed to be careful in removing the stomach so as
830 to avoid punching a hole through it for this reason, according to one elder. Some interviewees seemed to
831 suggest that one would see more clams in walrus caught in the spring than the fall.

832

833 Most interviewees did not identify any changes in walrus diet or feeding areas over time. However, one
834 respondent said he had heard that they are eating smaller clams now compared to before, and that there
835 has been a large decline in the number of clams. Another interviewer said walrus are feeding in different
836 places now. And another interviewee posited that the ocean currents were dying, and that this spelled
837 trouble for animals which Iqalut hunt; the currents, he argued, provided food for these animals, so without
838 the currents, there would no longer be food.

839

840 Walrus Health

841 One elder who last hunted in Diomedede in the early 1950s reported that he had never seen any sick walrus,
842 and another elder who lives on Diomedede stated that walrus health had been the same over his lifetime, and
843 that he had not seen any sick walrus.

844

845 However, some other interviewees noted that they have seen some levels of sickness amongst the walrus
846 population. One hunter, while noting that he had not seen much in the way of changes to walrus health
847 over his lifetime, did note that it was now being said that walrus were getting the disease problems that
848 bearded seals have been having (see also Garlich-Miller et al. 2012, NOAA and USFWS 2012). They are
849 getting little lumps on the flippers. A hunter would not know until after he shoots the walrus; in these

850 cases, they would not eat the meat, and would send samples in for testing, when possible. Another hunter
851 stated that, once in a while, they would encounter a sick walrus, but that it is rare. In these cases, only the
852 ivory could be salvaged because one does not know what is in the meat. A hunter is able to determine the
853 health of the walrus by visual inspection (see also Gadamus 2013). The fatness of the blubber and the
854 color of the skin (which can range from pink-reddish to brownish-reddish) are indicators of health. In
855 addition to thin blubber and being skinny, a walrus having lesions or sores around the tusk area and
856 cheeks would be a sign of sickness. Two hunters stated that they had noticed some walruses that are thin.
857 Another interviewee noted that he had not heard of reports of sick or diseased walrus, but that he told
858 hunters if they saw such a thing to turn in samples to the Alaska Department of Fish and Game. He noted
859 that previous testing had been done on samples and had turned up mercury in walrus liver and cadmium
860 in walrus kidney (see also USFWS 1994: 23, Garlich-Miller et al. 2011: 62-66). One hunter noted that
861 some walruses, seals, and bearded seals are sick, and that you cannot touch them, and have to throw it all
862 away if you get such an animal. He felt this was a big change, and that more diseases were being seen on
863 these animals now. You could see lumps on the neck, chest area, or inside the body, eyes with pus,
864 discoloration, or detect a rotten smell in sick animals.

865

866 Hunt Abundance

867 Diomede has endured marked declines in walrus hunt abundance within the last 25 years. Robards and
868 colleagues (2008, 2013) have discussed this dramatic reduction in both overall catch and per-capita catch
869 rate on Diomede within the last two environmental regimes dating back to 1989, though they attribute the
870 decline primarily to changing societal factors. The weight of this decline in hunt abundance is evident in
871 Diomede; indeed, a photocopy of a table with walrus harvest results from 1989 to 2011 (from a recent
872 report) on which this dramatic decline is illustrated is on full display in the Diomede Community Hall.
873 One hunter noted that only 12 walrus were taken in 2012 (another indicated it was an even lower
874 number), and none at all in the spring, which may have been the first time ever for the latter occurrence
875 (another hunter said that only a few had been harvested that spring). The spring hunt appeared to be
876 identified as the most important season for the walrus hunt for Diomede.

877

878 Interviewees indicated that hunt abundance has decreased. One hunter noted that the trend has been less
879 and less harvest over time, and another argued that it seemed like it was the past five years where people
880 were getting less walrus. While one interviewee stated that people are able to harvest what they need
881 now, and another noted that hunting seasonality has changed because people are able to procure non-
882 subsistence foods now, another local expert on walrus preparation indicated that the hunt is not as
883 abundant currently as the community would like it to be:

884 [O]ur hunt now is not as abundant as we'd like it to be. Especially when we ran out of
885 food in Diomedede last fall, and that spring, the ones that did collect the food, really benefit
886 from it. But it was still not enough. But it, you know, if there was maybe a dozen more
887 walrus and a dozen more ugruks, would've made a difference. (F. Ozenna 2011b)

888 For this study, the most common cause attributed to decreased hunt abundance by interviewees was
889 weather. One interviewee noted that the weather is bad now, changes quickly, and is unpredictable, and
890 this means people do not get to hunt as much. One hunter suggested that perhaps it was bad weather in
891 the most recent spring which had caused the very low harvest numbers for that season. Another
892 interviewee held the same view, but also added that hunters are not currently getting as much as they
893 theoretically could be. One hunter suggested a number of sociocultural changes as possible causes of
894 decreased hunt abundance, including changes in dietary practices, lack of interest, tradition not being
895 perpetuated, and a preoccupation with technologies such as computers, television, and other electronics.
896 This hunter also suggested that people are seeing less walrus now because they go out to hunt less, and
897 put in less effort, though noted that walrus may also be using the ice differently now than in the past.
898 Two interviewees suggested that the shift to a decline in hunt abundance could be attributed to a
899 significant degree to the involvement of "Fish and Game" [the phrase "Fish and Game" is often used by
900 region residents to refer to numerous state and federal resource management agencies, so it is not clear
901 who specifically was being referred to by this interviewee] during his lifetime. One hunter provided a
902 more lengthy list of possible causes:

903 Weather, ice condition, people not preparing to go right away or you know, making trails
904 is a lot of hard work through the ice and not many people are willing to do that in the
905 storm while it's cold and whatnot. But a good hunter and his crew would always try to
906 make the best effort, find a way to get out there. But yeah, we do have, we do have game
907 that are all over though. (R. Soolook 2012b)

908

909 Hunting Walrus

910 This section is a discussion of results relating to Injalit hunting rules and safety, hunting technology, hunt
911 timing and location, and information on how walrus are hunted.

912

913 *Rules, Safety, and How Walrus are Hunted*

914 With regard to hunting safety, rules, and guidance, much of this topic was the exclusive focus of a recent
915 booklet produced by Kawerak as part of another project, one which contributed data to this project
916 (Kawerak 2013c); the reader is encouraged to consult that work, which was informed by data from
917 Diomedede as well as a number of other communities, for a more detailed discussion of the topic of hunting

918 safety. Additionally, another recent Kawerak booklet (Kawerak 2013d) similarly covered the topic of
919 traditions of respect related to hunting activities, and was also informed by data from Diomedea; the topic
920 of respect is briefly noted below in this section as well as elsewhere in this report as relates to the
921 relationship between Ingalit and walrus. Some safety notes, rules, and guidance which hunters and former
922 hunters noted during interviews included:

- 923 • Safety comes first.
- 924 • Be careful. This also includes being careful with firearms (especially young people).
- 925 • Be alert and attentive.
- 926 • Be adaptable.
- 927 • Be alert when around walrus in the water. They can come up to, and attack, the boat. If they are
928 close, you can put an oar in the water on the side of the boat; walrus will leave because they think it
929 is a killer whale. One interviewee noted you could also touch them to scare them off if necessary,
930 another said you should shoot low to scare them off, and another said you shoot a walrus that is
931 being very aggressive towards you.
- 932 • Take the safety gear you need to survive out with you.
- 933 • Try to get walrus on the outside, rather than the inside, of ice, so as to avoid getting trapped in
934 between ice that is coming together.
- 935 • Avoid killer whales.
- 936 • Tell people when you are going out to hunt and when you are coming back.
- 937 • Plan properly for hunting.
- 938 • Bring the necessary provisions for the hunt.
- 939 • Listen to the captain.
- 940 • The weather is not good anymore, does not stay good for long, and is unpredictable. As a result
941 hunters can not stay out for long periods like they used to be able to.
- 942 • Do not go right up to a walrus unless they are dead.
- 943 • When there are many walrus in the water or on the ice, leave them alone.
- 944 • Take note of the environmental conditions before going out hunting, and also when out there, such
945 as: ocean currents, wind, weather, clouds, temperature, and the ice. It is important to know these
946 conditions.
- 947 • It is important to know where the currents are and whether to use or avoid them.
- 948 • Do not let someone who doesn't know what they are doing drive the boat.
- 949 • The one who knows most should be in charge.
- 950 • Work hard; people would work hard and forego sleep, especially during spring hunting.

- 951 • Use teamwork. Be optimistic.
- 952 • Be quiet.
- 953 • Stay downwind of walrus (so they do not smell you, which would lead them to move off the ice).
- 954 • Butcher as much of harvested walrus as you can while you are out on the ice.
- 955 • The first boat that sees walrus or a herd gets to go after them; crews are not supposed to encroach
- 956 on other crews' locations (but crews will help each other if needed).
- 957 • Be ready with a harpoon right away after shooting at a walrus, because a dead walrus will sink.
- 958 • Places identified as where to shoot: base of neck area/where the brain is; right below the ear; the
- 959 neck or the eye.
- 960 • Your hunting knife should always be at hand when needed.
- 961 • Show respect towards animals (e.g. do not harm them for no purpose, do not waste).
- 962 • Try to get a lot of meat, but do not be wasteful and do not kill what you can not eat. Hunters also
- 963 keep the community's needs in mind when harvesting, and not just themselves.
- 964 • Do not think about walrus too much, or want to get them too badly, or be greedy, or you will not
- 965 get them.
- 966 • Interviewees identified a number of times in which one would generally not hunt walrus, though
- 967 there could either be exceptions, or other interviewees who made comments to the contrary or did
- 968 not mention that as a rule. The situations identified were when walrus are hauled out, when they
- 969 are feeding, or leaving females with calves alone unless they attack the hunters.
- 970 • In general people do not hunt walrus that are hauled out.
- 971 • In spring when walrus first come, you let the first ones pass; they are like scouts, and if you go after
- 972 them they will go back and tell the others and then the walrus will not come through your area.
- 973 • Leave alone walrus who cry, wipe their eyes, call out, lay on their backs, click their teeth, or are
- 974 dancing.
- 975 • If someone in the community dies, people should not conduct subsistence activities or hold any
- 976 community event until that person is buried. This is still practiced but is not taken as seriously as it
- 977 was in the past.

978

979 Walrus are hunted from boats. Hunters can mimic walrus language, and holler at them, which will make
 980 them come in, if needed. Most shots are taken at close range; one can successfully use even small caliber
 981 rifles if the hunter knows where to shoot and is accurate, although it appeared that young interviewees
 982 were using larger caliber rifles. Whatever environmental conditions are extant - such as wind, currents,
 983 the weather - can impact hunting. Hunters will hunt whatever game is present when they are out hunting

984 walrus; they will often thus be hunting walrus, seal, and *ugruk* (bearded seal) at the same time. Crews are
985 chosen largely based on family ties, though others can fill in. The boat captain is in charge of the boat
986 and crew, and is responsible for food and gas. The captain sits in the back, and directs where to go.
987 Positions on the boat crews have changed with changing technology, as some positions are no longer
988 needed. For example, paddling, bailing, and inflating seal pokes are jobs on skin boats, which are not
989 currently being used at Diomede. Bailing and cooking are typically tasks for younger, inexperienced
990 members of the crew. The bow man is second in charge, and gives guidance as to where the boat should
991 navigate. One interviewee noted that an elder would be part of a crew as well. Skin boats carried 8 to 9
992 people, whereas the aluminum boats currently in use carry 4 to 5 people. Crew members are responsible
993 for helping to butcher harvested walrus as well. Crew members will talk to each other as well as use
994 standardized hand signals while out on the water (see also J. Raymond-Yakoubian et al. 2014).
995 Interviewees had varying opinions about the extent of change which had occurred related to hunting.
996 Elders tended to indicate that much had changed (e.g. clothing, how much is hunted, how hunters
997 behave), whereas younger interviewees were more split in terms of their opinions on the matter.

998

999

Hunting Technology

1000 Elders seemed to prefer animal-based hunting clothing, while younger interviewees did not comment on a
1001 preference for this, and also did not mind using synthetic ropes and many other non-traditional
1002 technological items (e.g. GPS). However, all interviewees who commented on the matter preferred skin
1003 boats to aluminum boats. Skin boats, which are no longer in use, are considered to be more flexible, hold
1004 more meat, ride over waves and rough conditions better, are easier to haul over the ice, are good for
1005 shelter if caught out on the ice, and are easier to patch if they get a hole (see also J. Raymond-Yakoubian
1006 et al. 2014). One skin boat was reported to have been used in the fairly recent past, though none are
1007 currently. In addition to aluminum boats, other non-traditional technology which is currently used
1008 includes high-powered rifles, ammunition, GPS, radio, and satellite phones. One interviewee commented
1009 that in current times there is a need to bring out more safety gear than in the past. Other equipment used
1010 while hunting include a walking stick, throwing line, harness, and a rope to put through the mouth of a
1011 harvested animal for dragging it (these items are essential for seal hunting).

1012

1013 Two Diomede elders provided an interesting discussion on a variety of aspects of change incorporating
1014 technological, cultural, ethological, and environmental considerations:

1015 Patrick: The old people long ago used to talk about harpooning them in the past when
1016 they had climbed below our house, and because there wasn't any guns, motors or
1017 machines. There was no noise on the land. James: When they had no guns they were

1018 hunting walrus by harpoon. Patrick: It has changed. Even the ice has changed, it is no
1019 longer as it was in the past. The old ice comes first in the fall. First the slush in the fall
1020 from there the ice formed. There are no massive piles of ice, they are no longer seen at
1021 Diomedede. James: We used to use it for water long ago. The clear ice was used for our
1022 drinking water, at one time. Patrick: It is no longer seen; we don't see any of it any more.
1023 Long ago, our ancestors would try and get lots of meat and that was it. Right now, they
1024 have changed, the young men see a walrus and he comes carrying a gun, running to the
1025 walrus and making lots of noise like the walrus, and you could hear them. I always tell
1026 them, "How many years have we been here?" There are lots of walrus that are coming
1027 to Diomedede. Last year there were lots of them on the east of the island, and the other
1028 year. There were many *aaġluit* [killer whale], once again, the *aaġluit* attacked the walrus.
1029 The current has changed. It no longer moves at it did, the currents. When the old ice
1030 comes it used to be on the beach and we could go hunting. They used to tell us not to
1031 come from the north because the current is going both ways. Also, we were told not to
1032 come in through *Eqauqneun*. The behavior of the walrus has not changed to my
1033 knowledge. James: It will not change. Patrick: The behavior has not changed. James: It
1034 will not change. Patrick: Only the ice and current. It is due to the current. James: The
1035 weather has changed. Patrick: We don't have any traditional clothes, because all of it is
1036 white men clothes. They are not worth it. (P. Omiak and J. Omiak 2010a)

1037

1038

Hunt Timing and Locations

1039 As noted earlier, detailed spatiotemporal information about hunting (i.e. hunt timing and location) were a
1040 specific focus on another recent Kawerak project involving Diomedede hunters (as well as hunters from
1041 other communities; see e.g. Kawerak 2013b); therefore, to avoid redundancy, information about hunt
1042 timing and location will be kept to a minimum here. A 100-mile radius appeared to be the outer boundary
1043 for what was reported as a possible range for walrus hunting. In terms of distance hunted from Little
1044 Diomedede Island, spring walrus hunting appears to have the largest range, with fall hunting coming next,
1045 and then summer and winter hunting being conducted even closer in from Little Diomedede. People will
1046 hunt when they are able throughout the year, with certain exceptions (e.g. if the hunter avoids hunting
1047 walrus when they are feeding), but in general the bulk of walrus hunting occurs in the spring and fall with
1048 the corresponding walrus migrations through the Diomedede area.

1049

1050 There was a general preference expressed for hunting south of the island as opposed to north; a number of
1051 factors were posited by interviewees for this: to hunt north means coming back against the current to get

1052 home, to hunt south means you can go back home with the current if the weather is good, and there is a
1053 dangerous eddy north of Little Diomed Island which is to be avoided. Some hunters reported changes
1054 over time to where the walrus are or where they hunt (because of changes to where the walrus are
1055 migrating, changes in ice and ocean current conditions, and changes in the weather). The timing, speed,
1056 and process of ice break-up and freeze-up, as well as the direction of wind and ocean currents, can impact
1057 when and where the walrus are and when and where hunting can take place. It was commonly reported
1058 that where the ice is will be where the game is, and thus where the hunters want to go. Hunters will also
1059 use lookouts offering a good vantage point to get an idea of where they should go to hunt. Hunters will
1060 go hunting when they can get out (e.g. the ice conditions allow) and when the game are close enough to
1061 hunt. People will generally hunt wherever they are able, though will ask permission of other villages if
1062 they are hunting right in front of their community. Hunting starts when the walruses migrate through, and
1063 stops when enough food has been obtained, when the animals are so far away it is not prudent to follow
1064 anymore, or when the environmental conditions do not allow. There are particular areas that are avoided,
1065 such as a dangerous eddy north of Little Diomed, for safety reasons.

1066

1067 Dividing the Harvest

1068 Interviewees identified a number of different processes associated with the dividing of walrus parts from
1069 a successful harvest. This is ethnographically interesting, as it suggests that there is less standardization
1070 in the details of this practice than community members assume. Some discussions and descriptions
1071 during interviews also seemed a bit contradictory as well, which further indicates a non-standardization.
1072 However, a general theme of equality and fairness do permeate most of the reports of this practice. Some
1073 of the different practices associated with dividing walrus parts reported by interviewees are presented
1074 below:

- 1075 • The boat captain is in charge of the division of meat. He is always the first to pick, and always
1076 receives the heart. If he wants to share with the crew, he will. He always receives tusks to
1077 compensate for gas money and other provisions, which he is responsible for providing.
- 1078 • The captain buys the gas (though others may contribute). As captain he gets the first pick of ivory,
1079 and some captains take a bit more when they divide up the meat, selecting choice pieces (though
1080 this captain did not practice this). On some boats the one who shoots the baby walrus gets it
1081 entirely. However, this captain does not allow that, and when multiple baby walruses are shot,
1082 everyone in the boat gets one.
- 1083 • The person who shot the animal gets half, and the other half is distributed amongst the rest of the
1084 crew.
- 1085 • For those who did not get a tusk the first time they went out, they will receive it the next time.

- 1086 • Half of the walrus catch was divided amongst the crew.
- 1087 • The captain always lets the crew pick the meat.
- 1088 • There is a particular way to divide game, with people of particular status receiving particular shares.
- 1089 • Everyone in the boat gets an even share.
- 1090 • Everyone in the boat shares equally. The captain is in charge of the dividing, and gets the first
- 1091 choice. The captain may take the whole head, or share it. However, this interviewee also stated that
- 1092 the supervising elder in the boat would get the first choice, or that the captain would ensure he
- 1093 received a choice selection, and then the crew divides the rest, with an attempt to divide it equally
- 1094 so that nobody gets a big share.
- 1095 • The person who shoots the baby walrus is usually the one to get it.
- 1096 • Meat is divided when the boat gets home, and it is always split equally. The captain will tell the
- 1097 crew to pick whatever they want. The crew would pick equally.
- 1098 • The catch used to be divided from front to back (in the boat), but now crew members just take what
- 1099 they want.

1100

1101 The overriding patterns here appear to be that, despite some non-standardization in practice (both between
1102 and amongst interviewee age sets), the boat captain is in charge of the division of meat, and while he may
1103 receive some of the choice parts, a spirit of fair and equal division of parts amongst all the members of the
1104 crew directs the process. A few interviewees did, however, voice the opinion that the division of parts
1105 was not currently done as it had been done in the past.

1106

1107 Preparing, Storing, and Using Walrus

1108 In general, men and women have different roles in terms of their interactions with walrus. Men are
1109 responsible for hunting, field or on-shore butchering, and dividing (amongst crew members) of the animal
1110 upon a successful hunt. Women are responsible for most aspects of turning the harvested animal into
1111 food or some other item (e.g. Eskimo raincoats). There are some exceptions (two bachelors did their own
1112 preparation work, and it was reported that one woman occasionally participated in hunting), but this is the
1113 general rule. In terms of women's tasks, this would involve, for example, cutting and preparing meat and
1114 organs into different final food products, splitting skins for use in skin boats, and preparing clothing
1115 products; more of these uses of walrus are discussed below. Some of these post-harvest processing
1116 activities do involve both men and women at some stage, however. For example, there was no discussion
1117 of any strict gender differentiation in terms of the actual storage of meat in meat holes. Additionally, both
1118 men and women were responsible for different tasks in the construction of a skin boat (women would
1119 split the skins, identify where skins should go on the frame, and do the skin sewing, while men would put

1120 the split skins on racks to dry, soak the skins to make them soft, and do the framing and assembly work
1121 for the boat and its skins).

1122
1123 Walrus are now, and were in the past, used in a variety of ways by Igalit. The primary way is for food,
1124 prepared in a variety of ways, and using almost the entire walrus. Appendix 2, for example, details a
1125 number of ways walrus may be prepared as food. Additionally, walrus tusks and penis bone are used by
1126 hunters for carving (including selling these carvings to provide income). Walrus parts were in the past
1127 also used to make a number of other items as well, such as: skins for the hulls of boats, for containers
1128 (including Jolles et al. 2001: 28-29), for a ball to play games with, as a covering under which food items
1129 could age; baby walrus skin for rawhide rope and harpoon line; stomach for drums, bags, waterproof
1130 jackets, windows, and pouches (Kaputak 1979); intestines for waterproof jackets, doors and windows
1131 (including Jolles et al. 2001: 280); jawbone for harpoon heads; blubber rendered for oil; and inflated dried
1132 walrus bladder could be tied to the end of a harpoon and used as a paddle (Kayouktuk 1983).

1133
1134 There are many ways in which the parts of a walrus are prepared and stored for their various usages.
1135 Butchering of the walrus is largely the men's job, and is done either out on the ice or once on shore. After
1136 the animal has been butchered and divided up, the work of preparing and storing the parts begins. Edible
1137 portions of the animal include the kauk, meat, offal, female breast milk, and blood, many of which can be
1138 prepared in a variety of ways. Parts of the animal can be dried, half-dried, boiled, baked, fried, and/or
1139 aged (i.e. fermented or soured). Appendix 2 of this report details food preparation techniques for various
1140 walrus parts derived from interviewing with a Diomedede expert for this project. Other non-walrus foods
1141 are important as well in regard to walrus as a food; for example, clams are obtained from walrus stomachs
1142 and eaten, bearded seal is often eaten with walrus, and seal oil is often used to preserve walrus meat.
1143 Appendix 3 of this report contains, among other things, some information pertaining to the preparation of
1144 walrus skins for use in skin boats, and walrus stomach for use in traditional drums.

1145
1146 One elder noted that,
1147 [t]he only time that we rest is in the winter when we stop boating and the ice comes in.
1148 And then it is the time for storing food by putting it away and aging it. The women also
1149 rest in the fall time until the ice returns. They work constantly on the meat storing it,
1150 cooking it. They fill up the meat holes (P. Omiak and J. Omiak 2010a).

1151 Another elder noted that famine prevention was why people on Diomedede put food away in the spring, in
1152 case come winter no animals had arrived and the weather was bad (J. Omiak 2012). Meat holes were
1153 traditionally the main way of storing and aging walrus meats and organs. Jolles reported that in 1999,

1154 “[o]f the sixteen meat holes, one was said to have been abandoned, and a second one appeared to be in
1155 disrepair but may still have been in use” (Jolles 2006: 280). It appears that meat holes are not (or only
1156 barely) used anymore currently in Diomedede. One interviewee attributed this change to the use of freezers,
1157 another said people have forgotten, another attributed it to temperature increases causing the temperature
1158 inside the meat hole to be too high in the summer thereby leading to spoilage, and another resident
1159 claimed it was simply because there was no meat. There appears to be less fermented walrus currently
1160 being eaten in the community. In the past, there were also some other means of aging and storing walrus.
1161 Sometimes, walrus was aged on the beach (particularly under skins), and also skins would be aged inside
1162 the *qagri*. People also had cellars underneath their homes for storage. Another means of storage were
1163 containers made of walrus skins sewn together (these could be placed in the meat hole) which would hold
1164 foods and blubber. Walrus stomachs were also used to make bags as well to store and carry food.
1165 Freezers are now the main, if not sole, means for walrus meat and organs storage (in addition to what is
1166 used when walrus is stored while fermenting).

1167
1168 Meat and organs were placed in the meat hole in July, and left there until just before the first snow
1169 arrived. This used to mean removing the meat in early October, though as temperatures have increased
1170 owing to climate change, the time for waiting to remove items was extended into November. Before
1171 families placed their meat in a meat hole (which could be shared amongst families), they would place a
1172 mark or tag on their meat to indicate their particular ownership; the meat hole owner did not tag his items
1173 (P. Omiak 2011a, Kawerak 2011). Meat holes were filled with *kauk* on the bottom, then placing the items
1174 into it that were to be stored there, then covering it up with another *kauk* and placing whale jaw bones
1175 atop that. Someone would be inside the meat hole during this process, packing items in and ensuring that
1176 water will drain.

1177
1178 A number of local rules pertaining to food (e.g. preparation, storage, and consumption), and in some cases
1179 changes to them, were noted during this research:

- 1180 • People used to put meat away right away; now people do not put it away very fast.
- 1181 • One interviewee noted that there are now more bugs on Diomedede, which has changed how she
1182 prepares some of the meat so it doesn’t get eggs on it.
- 1183 • Cut out the eyes of a harvested walrus, throw back the head (after removal of parts of it), and say to
1184 the animal to come back again. This is so the walrus doesn’t see you, so it will come back to
1185 hunters and give itself to them. (Other interviewees contra-indicated that this was something that is
1186 done. Another interviewee only cut out the eyes, and only sometimes, mostly when there isn’t an
1187 abundance of walrus.)

- 1188 • If you are pregnant and eating walrus, you shouldn't eat the soft bone.
- 1189 • Fermented walrus head used to only be eaten by old men gathered at *Eleqleeq*. Now, however,
- 1190 anyone eats it.
- 1191 • Wasting is not allowed - this is now a law, but before formal western legal regulations, it was also
- 1192 simply a Diomedede rule. Additionally, harming or killing animals just for the fun of it, and
- 1193 mistreatment of animals, is not allowed. Respect for walrus is a value.
- 1194 • Sharing is valued. As one elder noted, “[w]e gotta share that’s the way we are, you gotta share
- 1195 yeah, that’s my life the others too share, share, share fresh meat, yeah” (P. Omiak 2011a).

1196

1197 Traditional Stories

1198 The most important story Diomedede residents associated with walrus is the story of Avuuna. This story
 1199 involves a man who used to enjoy eating walrus whiskers, but did not eat other parts of the walrus. One
 1200 day when out hunting, he was dragged under the water by a walrus, who gave him the ability to breathe
 1201 underwater and took him to live with the walrus. He travels south with the walrus to where they are from,
 1202 and during his travels learns how they live, and in a walrus *qagri* he confronts shades (spirits) of walruses
 1203 he abused by removing their whiskers. During the annual migration back north, when they are
 1204 approaching the Diomedede islands, the man, who has now started to become (like) a walrus, escapes from
 1205 the group to Little Diomedede on land. He lives outside the community, unable to bear the odors of
 1206 humans; this spot on Little Diomedede is still known today by its native placename (*Tuveq*). When the
 1207 people of Diomedede experience a time without walrus, they ask the man, whose name is Avuuna, to go to a
 1208 point on the Island and call out to bellow like a walrus, bringing the walrus in (Q. Milligrock 1981).

1209

1210 A number of interviewees were familiar with this story and during interviews recounted different portions
 1211 of it; one interviewee commented that everyone knows that story. For a number of people, it was the only
 1212 narrative of this kind which could be identified as existing that related to walrus (one interviewer
 1213 explicitly stated that this is the only story of its kind relating to walrus). Interviews elicited only one
 1214 other possibly traditional story, and it was of a man who had grabbed the tusk of a walrus and broke its
 1215 neck (the story had been told to the elder when he was a child). One hunter identified the story of Avuuna
 1216 as being about wasteful take, and described it as a story that had “already come true.” In the conversation
 1217 following discussion of this story, this hunter noted that wasteful take was something people should know
 1218 not to do, and that it was a rule that people tried to lived by now. When asked if walrus knew if people
 1219 were being wasteful, he stated that it was possible, and perhaps that was why fewer were coming around
 1220 now, because people were being wasteful.

1221

1222 One individual who, upon questioning, indicated that he was not familiar with any traditional stories
1223 relating to walrus, noted that all that matters are that the walrus are there, and that they arrive with the
1224 currents. Another individual noted that he had taken the advice of his father, choosing Christianity
1225 instead of believing in traditional stories and songs. Another individual took discussion of this story with
1226 an interviewer as an opportunity to reflect upon the current absence of intergenerational story-telling on
1227 the island between elders and youth.

1228

1229 Community Activities

1230 Other than the preparing and storing of walrus parts as food, skins, and other items, which occurs after
1231 successful harvests, it was widely agreed-upon that no special community activities such as celebrations
1232 are currently practiced in Diomedede when walrus are harvested. Some interviewees stated that no such
1233 activities took place in the past either. Some interviewees, however, identified a number of these types of
1234 activities which used to occur upon such an event:

- 1235 • a large meal was cooked
- 1236 • the old men would ferment a walrus head and eat it (it appears, however, that this was not
1237 necessarily associated with a particular successful harvest)
- 1238 • a feast would sometimes also be held and the walrus skin and a walrus head brought in
- 1239 • a small Eskimo dance would be held atop the meat holes and various community houses
- 1240 • people would go down to the beach, play on the beach, and so on

1241

1242 One interviewee noted that a current community event which sometimes occurs when a walrus is
1243 harvested is that new people (e.g. teachers) to the island who have not seen a walrus butchered before
1244 would come down to the beach to watch.

1245

1246 Three other forms of community activities can be gleaned from the archival sources and interviews as
1247 occurring after major hunting periods. The first is the gathering of people in the *qagris* for story-telling,
1248 which in fact was a regular occurrence throughout the year. One interviewee described *qagris* as a place
1249 where elders gathered in the winter and told stories, while another simply noted that hunters - especially
1250 old hunters - used to go the *qagris* every night, and would talk of the weather, ice conditions, game, and
1251 so on, and this was also a place where people learned from their elders.

1252

1253 A second activity which occurred after a hunting period had ended were games. As noted in Jolles et al.
1254 (2001: 8-9), walrus skin could be used to make a small ball which was used for playing a game where
1255 people could win prizes by catching the ball. The game was played in July, when hunting for walrus and

1256 whales was over. Anyone and everyone could play. At the end of hunting, games were said to have
1257 always been held. One particular person was identified as sponsoring these games.

1258

1259 A third activity after hunting was travel and trade. Diomedede people would travel to Kotzebue, Point
1260 Hope, and Shishmaref bringing walrus skins and possibly other walrus parts as well (Jolles et al. 2001:
1261 80-81, J. Omiak and A. Ahkvaluk 2010b, Sinnok 2011).

1262

1263 Children and Young People

1264 Interviewees were asked about the involvement of children and young people in walrus hunting and
1265 preparation. They also in the course of other discussions talked about their own experiences when they
1266 were younger, which gave a good insight to the involvement of youth in these activities. There are some
1267 obvious limitations and biases to the data, however, in that data was collected solely from individuals
1268 who are now adults and elders; the reader is advised to bear this in mind.

1269

1270 Both girls and boys appear to start explicit learning about walrus hunting or preparation on average
1271 between the years of 8 and 14, though one interviewee reported learning as early as age 6. Boys learn
1272 about hunting and carving from men, girls about preparation and storage from women. Most learning, for
1273 boys at least, comes mostly from within the family, particularly fathers, uncles, and grandfathers. Boys
1274 generally begin hunting seals on foot before learning to hunt walrus in a boat. Boys typically began their
1275 work in a boat as a bailer (when skin boats were used) and also inflating seal pokes and cooking, later
1276 progressing in terms of responsibility. One woman who was interviewed talked about how hides which
1277 had problems with them were used as training tools for learning how to work on or fix skins, even though
1278 they would not be able to be used in the end. Men reported that scolding from their elders was a common
1279 feature of the teaching process. A great deal of learning used to occur in the *qagris*, where story-telling
1280 and other forms of knowledge-sharing were conducted regularly; however, *qagris* are no longer in use in
1281 Diomedede. Additionally, of course, at any age children were reported as watching and sometimes trying to
1282 help adults in their walrus-related tasks, e.g. observing butchering, watching as skins were dried, and so
1283 on.

1284

1285 Project participants indicated a number of current problems, however, with intergenerational learning. A
1286 number of interviewees stated that many younger people do not want to learn from adults and elders
1287 about subsistence practices and traditions. Various reasons were reported for this: that younger people
1288 seem to not care, that they think it is a joke, that they are afraid to learn or make mistakes, that they are
1289 overly sensitive, that they are uninterested in learning about hunting and stories, that they feel they

1290 already know what is needed to be known about these activities, that they do not pay attention to their
1291 elders, and that younger people are not as nice or respectful as they used to be. Two interviewees
1292 discussed the ways in which younger people not learning about hunting from older people can have bad
1293 consequences, including leading to injury. Some other responses from interviewees mitigated these
1294 negative assessments, however; one interviewee noted that he feels that children are still interested and
1295 that they are also very adaptable. Another interviewee commented that some children are interested, and
1296 some not. And the aforementioned interviewees who discussed the negative consequences of not learning
1297 from one's elders also admitted that they too had been like this when they were young.

1298

1299 One elder pointed out an institutional problem that was hinted at above and which likely plays an
1300 important role in contemporary problems in this area of Iqalit social life: the current absence of *qagris* in
1301 the community.

1302 Patrick: These young people probably forgot now days you know, but the reason why we
1303 don't get together with young people because we got no more *qagris*. [...] You know talk
1304 about something, something important especially hunting wise, hunting wise. (P. Omiak
1305 2011e)

1306 This assessment hints at problems lying not just with one particular community age set, but with both
1307 young and old, as well as at a larger institutional level. As other interviewees noted, *qagris* were an
1308 important place for stories and knowledge about hunting, environmental conditions, and game
1309 populations to be shared; the absence of such a regular feature in the community can reasonably be seen
1310 in important ways as cause and effect for a breakdown in intergenerational learning about traditional
1311 modes of interaction with walrus.

1312

1313 Current Hunting Challenges

1314 Some of the regular challenges identified by interviewees involved in the process of hunting were
1315 weather, the currents, and the ice conditions. For example, one interviewee noted in response to a
1316 question about what challenges exist that hunters face nowadays that:

1317 Edward: The current. The ice pack. We try to avoid the swift current, if the ice moving
1318 real fast, sometimes the current will pick up and move ice real fast. So we try to avoid
1319 that. Interviewer: And is that happening more often? Is that a new challenge or is that
1320 something that you've always had to deal with? Edward: We've always had to deal with
1321 it. Because every year is a different, it's always different it may be fast it may be slow.
1322 It's like I said to Julie, I told her it all depends on the current. We try to avoid where [...] it's
1323 already hang[ing] on to the main ice. You try to avoid that because the ice will come

1324 in and pile up little bit or just push it alongside, don't want to get trapped in there. And
1325 like I said we try to avoid the one up north, the eddy. (E. Soolook 2012b)

1326
1327 Two interviewees noted that vessel traffic posed challenges for hunting. It was noted that increased
1328 shipping traffic - as well as other commercial activities like air travel - in the area of Little Diomede
1329 presents a number of potential problems. First, it scares off walrus, who will continue to move north
1330 following the ice; additionally, it wakes them up, makes them more lively, which makes it more difficult
1331 to hunt them as compared to when they are sleeping and sunbathing undisturbed. It was also stated that it
1332 could impact walrus haulout behavior. Another concern ships present is that hunters are concerned a
1333 bullet shot at a walrus could ricochet and hit a vessel, and thus they wait until passing vessels are out of
1334 range, which takes away a sizable portion of their hunting opportunities. One interviewee noted that
1335 Diomede people had already lost potential harvests to vessel traffic. It was suggested that it would be
1336 good if ships were not around during the hunting seasons.

1337
1338 Several interviewees stated that environmental changes and walrus population changes presented a
1339 challenge for walrus hunting. One interviewer noted that animal migrations appeared to have changed,
1340 and hunters are having to go further to find them, but that hunters like to stay close because of changes to
1341 the sea. Another interviewer noted several challenges for hunters, all of which have the potential to be
1342 interconnected: changes to currents, less walrus being around, changes to the ice (the ice goes up north
1343 sooner and quicker than it used to), changes to the weather patterns (the weather changes to bad weather
1344 more quickly now), and the high price of gasoline. Regarding the weather, he stated, "Bad weather all the
1345 time. Weather changes fast now, you know. Those kids are lucky they don't remember the weather I grew
1346 up in. They'd be bummed out" (Iyapana 2012b). As this interviewee also noted, changes to currents may
1347 be leading to less walrus being around, and with less walrus around hunters have to go further, which can
1348 be difficult to accomplish because the weather changes so quickly to bad weather nowadays, as well as
1349 because of the cost of gasoline.

1350
1351 One hunter identified weather, decreased hunt abundance, and changes to currents as present or future
1352 challenges and problems for walrus hunting. He argued that while this presently creates a problem for
1353 some people, most families were getting as much walrus as they needed. He blamed "Fish and Game" for
1354 decreased hunt abundance (another interviewee expressed a similar view as well). Additionally, some
1355 other interviewees believe concerns with changes to ice and walrus populations are either currently
1356 overblown or inaccurate (one of these interviewees argued that the only hardship is in fact being created
1357 by those who regulate and manage walrus). Two interviewees identified the international border between

1358 Russia and the U.S., which runs between Little Diomed Island on the American side and Big Diomed
1359 Island on the Russian side, as a problem for hunters. People on Little Diomed have relatives in Russia,
1360 hunting used to be quite common across the border by indigenous people from both sides, and there has
1361 been a history of prohibitions and repercussions for Little Diomed hunters when crossing the dateline for
1362 hunting in the past - all of which illustrate the potential for hardship presented by a barrier to the
1363 migration of seafaring hunters. Two other interviewees discussed in detail the breakdown of
1364 intergenerational communication between older hunters and young people, illustrating how it could be
1365 seen as a hardship for hunters (Kunayak and Iyahuk 2012b). According to these interviewees, younger
1366 people claim to already know that which older hunters try to tell them, and this can result in negative
1367 consequences for hunting, including injury. A number of other interviewees also corroborated the decline
1368 of traditional institutions for knowledge-sharing on Diomed.

1369

1370 Other Aspects of the Iñalit-Walrus Relationship

1371 One aspect of the Iñalit-walrus relationship which has been touched on briefly above are issues of respect
1372 and care on the part of Iñalit people towards walrus. A number of interviewees noted that Iñalit have
1373 respect for walrus. Other than this being the case for reasons which went unstated, or simply as a matter
1374 of principle and belief, several explicit reasons were also offered by interviewees for why this was the
1375 case: 1) because walrus are their food, 2) because animals have feelings, and 3) to ensure there would
1376 always be walrus. This respect would also manifest in a number of externally obvious ways, such as, e.g.:
1377 1) not wasting animals (e.g. utilizing as much of the harvested animal as possible), 2) not bothering
1378 walrus when they are eating unless necessary, 3) leaving females with calves alone unless necessary, 4)
1379 knowing when and when not to kill, and 5) not hunting walrus that are hauled out on the Island, except
1380 under particular circumstances. Kawerak has recently produced a booklet from another study whose data
1381 contributed to this project; this work was entitled “Traditions of Respect: Traditional Knowledge from
1382 Kawerak’s Ice Seal and Walrus Project,” and dealt more directly and in greater depth with the topic of
1383 respect, and included data from Diomed experts; the reader is encouraged to consult this work for more
1384 information on this issue (Kawerak 2013d).

1385

1386 Some interviewees indicated aspects of a connection with walrus which go beyond mainstream western
1387 empirical understandings of human-animal relationships. One interviewee, for example, noted that he had
1388 heard that animals know when someone is going to die, and highlighted a story about a walrus which had
1389 cried when looking at a man, after which the man’s daughter died a few days later. Another interviewee,
1390 an elder, noted that when there is a walrus that is killed which still acts as though it is alive after its head
1391 has been removed, this is a sign that a relative will die. Another interviewee stated that she was told when

1392 she was young that if one saw seals or walrus in your dreams, it meant that they were coming to pick
1393 somebody, a spirit, up.

1394

1395 Finally, a number of rules and taboos related to walrus were identified by project participants which have
1396 not been noted elsewhere in this report. Some of these are listed below. Note, however, that some of
1397 these rules were contradicted by other data (e.g. one interviewee claimed a particular rule exists while
1398 another stated there were no rules for such an occasion). Some interviewees noted that there were no
1399 special rules pertaining to walrus (e.g. regarding treating them with respect). It should also be noted in
1400 general that project research seemed to indicate that men and women were much more familiar with rules
1401 and guidance which pertained only to their gender.

1402 • For all animals except birds (in which case this is the hunters' choice), including walrus, one must
1403 give away their first kill (or their share of a kill) to an elder. (However, this view is contradicted in
1404 Jolles et al. 2001: 83-84, other than to note in the latter that the individual's first walrus was shared
1405 amongst the crew.)

1406 • One interviewee had heard about customs for showing respect towards marine mammals, but does
1407 not know any of them.

1408 • If someone dies, subsistence activities should not be practiced until that person is buried, especially
1409 by the family that is mourning. Additionally, no community event should occur until the person is
1410 brought to rest. This is still practiced in Diomedes, but not practiced as strictly as it once was.

1411 • One elder noted that when he was growing up, you could not throw anything out; this was a strict
1412 rule. It was also considered taboo to dispose of human waste into the sea, as is practiced now, as
1413 that is where Iqalit get their food.

1414 • Two interviewees indicated that they performed a similar ritual upon butchering a walrus. One
1415 interviewee indicated that he would cut out the eyes of the walrus, throw back the head, and may
1416 also say something for the walrus to come back again. The saying was done to ensure walrus will
1417 come back again, and the removal of the eyes is so that they do not see you, so they will come back
1418 to the hunters and give themselves to them. The other interviewee stated that sometimes - mostly
1419 when there isn't an abundance of walrus - he will take out the eyes of the butchered walrus, in a
1420 similar vein as people further north do with seals. This was done so that the animal would come
1421 back. He was not sure if he believed this ritual was efficacious.

1422 • Note the following was indicated in 1981 with regard to proper care of meat and animals, and the
1423 ideals contained herein were noted as being still held today:

1424 Those with huge boats would return with great loads of walrus meat. They did not throw
1425 away the meat and did not leave it just anywhere. They loaded the boat to the extreme

1426 with walrus meat. They did not leave the walrus meat anywhere, these people our
1427 ancestors. They took care of the walrus, seal, and oogruk meat and did not mistreat them.
1428 They took the time to care for the meat. They took care of the blubber. They did not just
1429 toss them out, because this was their food and a source of heat. (Kaputak 1981)

1430

1431 The Importance and Significance of Walrus to Diomedé

1432 Study participants were asked about the significance and importance of walrus to them, their families, and
1433 their communities. Additionally, participants were asked what it would be like if walrus were no longer
1434 available to Diomedé. In addition to the discussion below, Appendix 3 highlights some of the ways
1435 walrus are important to the people of Diomedé. This Appendix is a (miniaturized version of a) poster
1436 which was produced for the community of Diomedé to display in a public place.

1437

1438 Two key, interrelated, ways in which walrus is important and significant to Iqalit were stressed by
1439 interviewees. The first key aspect of walrus importance is nutritional, i.e. as food. Almost all
1440 interviewees noted this as a key element of this animal's importance to themselves, their families, and
1441 their community. A number of interviewees noted, for example, how walrus is the main source of
1442 subsistence food for people living in Diomedé. As one interviewee stated, "it's vital, it's very important
1443 for our community because it's our diet, we live off it. It's the main source what our main diets here" (R.
1444 Soolook 2012b). While one interviewee argued that in the absence of walrus the people of Diomedé
1445 would be able to adapt dietarily, another interviewee stated that without walrus "[w]e'd starve. They are
1446 important. We eat them every which way we can, aged and fresh." (A. Soolook et al. 2011b). Other
1447 interviewees noted the quality of walrus as a food; one noted that "that's our main source of food, it keeps
1448 us full longer than the other food here and it lasts longer and if we don't see those no more it's just gonna,
1449 what we gonna eat after? Gonna have to learn to adapt to it I guess. But that's our main food, that's
1450 healthy food" (J. Ahkvaluk 2012a).

1451

1452 The connection between walrus and Iqalit is the way things are, and have been. And this leads us to the
1453 second aspect of walrus importance, the link between walrus and a sense of identity and history. Jolles
1454 has noted regarding Diomedé that "it can be said that in Diomedé subsistence as a life system is extremely
1455 important as a source of identity and tradition and continues to be major source of the cultural, social, and
1456 economic characteristics deemed by community members as important elements of heritage and
1457 belonging" (2006: 244). With regard to tradition, one interviewee noted in response to a question about
1458 whether walrus were important to Diomedé: "Yes. [...] Walrus, at one time we had nothing but walrus"
1459 (A. Ahkinga 2012), and another noted in response to the same question "Yes. [...] Maybe ten thousand

1460 years now they killing, hunting walrus. They need it for their food, for their food. Even skin for the boat”
1461 (J. Omiak 2012). The deep historical connection entailed in the subsistence way of life between people
1462 and animals is matched by a deep connection to the Ijalit sense of identity. As one interviewer so
1463 eloquently stated with regard to subsistence in general,

1464 When I cut my first seal I was maybe 11, 10 or 11 - [a] little old. And I was, I was...it
1465 was done after the spring hunt where the ladies were sitting by Standing Place, so I had 7
1466 expert ladies in front of me. Made me nervous, you know. And, because I was living in
1467 a world with education, so I was more adapted to this outside world, you know learning
1468 more from a book than doing things with your hands, so I kind of felt like an outsider. It
1469 was not like something I grew up with. I think that was my first understanding about
1470 subsistence. Who am I? Because I am taught this way, but I was brought up this way.
1471 And where do I start learning about, you know, tying this into my life where I feel
1472 comfortable with living with both. In Diomedes, you, you, when you're isolated here,
1473 you, you make choices, how you wanna live your life. You want to waste it away,
1474 complain and, you know, do no good, for your family or the community? Or do you
1475 wanna fill it up with stuff that interests you. Stuff you can feel, taste, see. And out here
1476 you got that opportunity, if you want it. May look just the same - it's just seal, it's just
1477 walrus, it's just birds, it's just eggs, it's just this, it's just picking. But, it all takes time, to
1478 have just those. It takes skill and practice. I really like Diomedes. I do. (Ozena 2011b)

1479 It is worth noting here Jolles' (2006: 244) remark that,

1480 Diomedes, like other Alaskan Eskimo communities (Iñupiaq, Yupik, and Yupiit),
1481 demonstrates contemporary identity (Jolles 1999; Jolles with Oozeva 2002) through
1482 active engagement in a mixed market-subsistence lifeway (Langdon 1986). [...] The
1483 continued reliance on a domestic subsistence economy for food, with its attendant role as
1484 an underlying thought system or philosophy, shapes contemporary community social
1485 relationships, notions of gender-defined work, and more generalized conceptions of male
1486 and female roles that derive from these. Thus, it can be said that in Diomedes subsistence
1487 as a life system is extremely important as a source of identity and tradition and continues
1488 to be major source of the cultural, social, and economic characteristics deemed by
1489 community members as important elements of heritage and belonging.

1490
1491 A number of other less common, but nonetheless quite interesting, views on the importance and
1492 significance of walrus were voiced by some of the interviewees for this project. Two interviewees
1493 highlighted the key importance of obtaining ivory in terms of reasons for hunting, as it enabled hunters to

1494 carve and then sell those items to get money and thus be able to obtain items they and their families need.
1495 Additionally, two other interviewees noted the importance of having walrus as food given the low income
1496 levels in Diomedes. Finally, one interviewee noted a connection between practicing a subsistence way of
1497 life and decreased pollution; when people do not practice subsistence, this interviewer reasoned, more
1498 waste is generated which is dumped into the sea and onto the ice. (It should be noted here that there is no
1499 flat land available on Diomedes for a landfill, so trash is disposed of on the sea ice or directly into the sea.
1500 A small incinerator is also used for certain items.) The interrelationships hinted at in this observation as
1501 well as in the variety of reasons why walrus are significant and important to Diomedes as discussed above
1502 are highly illustrative of the complexity of the interconnections between human-animal relationships,
1503 environment, economy, identity, history, and diet. Additionally, it also serves as a reminder of the
1504 potential for powerful changes in any part of this socioecological system to have significant effects across
1505 that system.

1506

1507 **Discussion**

1508 This project, and the LTK data it synthesizes and presents, makes several key contributions.

1509

1510 The first is the manner in which the data confirms much that is known from the perspective of walrus-
1511 related bio-ecological and anthropological data. While this is not a main thrust of this project, it is worth
1512 noting similarities between interviewee responses and scientific data in terms of, for example, changes to
1513 ice conditions, weather and climate changes, the nature of walrus migration patterns, haulouts, and
1514 habitat, walrus diet, recognition of threats to walrus populations, understandings of changes to harvest
1515 activities and patterns, and so on. When coupled with 1) the far-greater temporal depth of repeatability
1516 and evidentiary weight upon which this knowledge base is founded in comparison to western walrus
1517 science, and 2) its deep history of epistemic applicability towards the simultaneous and integrated
1518 stewardship of human and walrus populations (in comparison to a western history of dramatic population
1519 exploitation necessitating managed recovery, followed by further proposed management in response to a
1520 western-originated global climate crisis), this project makes the case that LTK (and in particular,
1521 Diomedes LTK about walrus) should be taken seriously in management, policy, and science discourse.

1522

1523 The synthesis of LTK presented here also contributes to a greater understanding of Diomedes society,
1524 culture and history at a broad level, and at a specific level, to human-animal relationships in the
1525 community, both of which are in limited supply in the available anthropological literature, as mentioned
1526 earlier in this report. This is the first project of its kind to holistically gather data on Little Diomedes
1527 sociocultural, historical, linguistic, ecological, and biological knowledge related to walrus. This project

1528 also supports ongoing educational and cultural heritage efforts in Diomedes as well as the region more
1529 broadly. For example, this project produced a glossary of Little Diomedes Inupiaq walrus-related terms as
1530 well as collecting a substantial body of data on walrus preparation and storage processes, both of which
1531 are of potential value to Diomedes in educational and cultural heritage activities. Additionally, this project
1532 integrated data with two other ongoing projects on cultural heritage in the region - one project on
1533 indigenous knowledge about ice seals and walrus, and another on indigenous knowledge and use of ocean
1534 currents.

1535

1536 Further, the data synthesized in this report demonstrates a rich local understanding of an ecology of
1537 change which includes numerous human, animal, and environmental factors. Interconnections were
1538 drawn in a variety of ways (as shown in the Results section of this report) by interviewees between, for
1539 example, ice conditions, walrus harvest, weather patterns, economic considerations, walrus behavior,
1540 walrus habitat and migration, hunting practices, and social changes in ways in which it is impossible to
1541 understand one component without considering others. Additionally, changes amongst these
1542 interconnected elements can be not only interconnected but potentially cascading, building upon and
1543 imbricating with each other, often to the great detriment of Diomedes people.

1544

1545 Further, this work supports particular expressed needs in the scientific and management realms that are
1546 highly germane in developing our understanding of walrus. For example, Fay (1982: 28-29), in
1547 discussing the harvests of different walrus concentrations, noted that:

1548 At Diomedes and points north, the harvests probably are of animals from both
1549 concentrations, for the distributional data suggest mixing of the two in the Chuckchi Sea.
1550 Since the animals from both wintering concentrations appear to transcend international
1551 boundaries and to be cropped by both the Soviet Union and the United States, the case for
1552 bi-national research and management of the Pacific walrus population is strong.

1553 Not only is one argument here confirmed by Diomedes experts through their information about the types
1554 of walrus involved in the migrations and harvest near Diomedes, the other is supported by this report's
1555 work in that it complements other work on LTK of walrus in Chukotka, and in that a number of its
1556 interviewees share a frustration with the practical implications of the political boundary between Russia
1557 and the US (which clearly has both social and scientific ramifications with regard to walrus).

1558

1559 Another need expressed in the recent scientific literature on walrus and change which this report
1560 addresses was stated by Robards et al. (2013: 78):

1561 Interannual variability in the timing and magnitude of the spring walrus hunt at Diomede,
1562 Gambell, and Savoonga reflects the dynamic social-ecological system in which hunting
1563 takes place. Although the broad patterns we describe here correlate with climatic regimes
1564 and known walrus ecology, we strongly emphasize the contribution of social factors.
1565 Diomede, in particular, during the latter two regimes has been subject to a suite of
1566 societal changes that reduce their capacity to hunt walrus.

1567 Sociohistorical factors were noted, both by a number of interviewees as well as in the general process of
1568 research with the community, as having played a crucial role in the changing shape of life on Diomede
1569 itself in general and subsistence in particular. Subsistence-related enforcement actions, outmigration from
1570 the community, deaths of community members, a possible decrease in the necessary subsistence-related
1571 knowledge and skills in the community, and changes in human behavior in general as well as
1572 interpersonal communication in particular (some of the latter assuredly owing to a decrease in important
1573 traditional institutional forms of communication) were all mentioned by interviewees or noted in the
1574 course of research as important sociohistorical events and factors. Interviewees in this project highlighted
1575 even more strongly the impacts of environmental changes on subsistence, as detailed in a number of
1576 places further above. Additionally, the portrait of change in the data is one which demonstrates an
1577 interconnected ecosystem of human, animal, and environmental concerns. Thus, aside from confirming
1578 the importance of particular sociohistorical factors and their impact on harvest abundance in Diomede,
1579 this report clearly supports the sentiment expressed in the above quote from Robards et al., which
1580 emphasizes the need for understanding walrus-related systems as “dynamic social-ecological” in nature
1581 and which requires understandings of social (and not just physical-ecological) factors to be satisfactorily
1582 robust.

1583

1584 Finally, a value of this work, as in much work with a substantial anthropological component, is that it
1585 offers the opportunity to expose in a constructive manner oft-unrecognized assumptions and biases in that
1586 which is familiar. For example, as discussed in greater detail above in the Results section, it is worth
1587 considering what assumptions and biases underlie considerations about walrus behavior when considering
1588 changes to that behavior over time; cross-cultural analyses (such as one which took into account the data
1589 presented in this report) could assist in this, making overall analyses more robust and meaningful.

1590 Another example demonstrating this type of value for this work is the view, expressed by some
1591 interviewees, that walrus give themselves to hunters. Alternate conceptions of human-animal
1592 relationships such as this should be incorporated into science, policy, and management when they are
1593 held by an impacted community - all of whose mainstream assumptions they dramatically complicate - in
1594 order for intellectually honest and ethically just science, policy, and management to occur.

1595 **Conclusions**

1596 What follows are the overall conclusions from this project.

1597

1598 The first objective of this study was to contribute to bio-ecological and anthropological knowledge of
1599 walrus, addressing needs to supplement current limited knowledge about walrus and to interface LTK and
1600 scientific processes. The second objective of this study was to address Iñalit concerns about a need to
1601 document their knowledge about walrus and their concerns about walrus and environmental change. This
1602 project utilized a multidisciplinary team to conduct archival research and integrate data from over 50
1603 ethnographic and linguistic interviews with 19 LTK experts over a three-year period on a variety of
1604 walrus-related topics. Furthermore, the data collected for this project was organized and delivered to the
1605 Eskimo Heritage Program, two community meetings were held in Diomedes and one in Nome to discuss
1606 project results and solicit feedback, a glossary of Little Diomedes Iñupiaq walrus-related terms was
1607 prepared as was a guide to preparing walrus for consumption, and a poster was prepared for the Native
1608 Village of Diomedes which illustrates the importance of walrus to the community.

1609

1610 The following results from collected data were synthesized in this report:

- 1611 • The various distinctions amongst the walrus population which Iñalit encounter were discussed in
1612 this report.
- 1613 • Information about the walrus population, including any changes to it, were noted. In general, the
1614 total walrus population visible to Iñalit has decreased, but the cause is unclear, especially regarding
1615 whether it is caused by a population decrease or by changed migration routes. Herd sizes appear to
1616 have decreased. Levels of concern about the future of walrus populations vary.
- 1617 • A rich body of data exists in Diomedes about walrus behavior. A number of interviewees identified
1618 characteristics of walrus behavior which are different than western understandings of animals,
1619 including the attribution of a greater degree of person-like qualities to walrus than are typically
1620 found in western understandings. Walrus are viewed as being intelligent. The different views of
1621 walrus behavior amongst Iñalit call for a more complex understanding of questions about
1622 behavioral change.
- 1623 • Walrus health is viewed to be good in general and to have stayed the same by most interviewees.
1624 Some interviewees have noticed signs of walrus diseases, and avoid the meat when these signs are
1625 present. Walrus exposure to toxins was also noted.
- 1626 • Clams were identified as the main food source for the walrus diet, though other food sources were
1627 identified by some interviewees.

- 1628 • Inqalit have a substantial body of knowledge about walrus migration processes (including changes to
1629 it, which have been quite noticeable, and are connected to changes in the icepack, ocean currents,
1630 and possibly other environmental changes), haulouts (including changes to walrus selection of
1631 haulout locations), and other habitat features.
- 1632 • Inqalit are keenly aware of the interconnections between ice conditions, weather patterns, climate
1633 change, ocean currents, and walrus. Significant changes have been noted in the ice conditions and
1634 concomitantly in walrus migration. Coupled with changes in weather patterns, these have entailed
1635 changes for hunting practices on the island.
- 1636 • The community currently identified some, but not many, rules and taboos as currently associated
1637 with walrus. Commonly expressed rules include having respect for walrus, not wasting, and
1638 practicing safe hunting techniques.
- 1639 • Many changes to hunting technology have occurred, and many are not well-regarded. While rifles
1640 are well-regarded, the move away from skin boats and traditional clothing is not.
- 1641 • Walrus hunting crews have fairly standard composition in terms of roles. Young children learn to
1642 hunt walrus (boys) or prepare walrus (girls) generally starting around the ages of 8 to 14, and
1643 family members are generally responsible for this tutelage (at least for boys). Dividing meat
1644 amongst boat members is generally considered to be done on an equitable basis.
- 1645 • Hunt location and especially timing appears to have been significantly impacted by changes
1646 manifested by climate changes. The window for walrus hunting has shifted and shrunk, and for
1647 many, hunting itself has become more difficult owing to changing ice, current, walrus migration,
1648 and weather patterns and conditions.
- 1649 • Walrus hunt abundance in Diomedede has steadily decreased and is approaching what may be near-
1650 record lows. There has also been a decrease in traditional walrus storage (in meat holes) as well as
1651 a decrease in a number of uses for walrus (e.g. for traditional raincoats and boat skins). Many
1652 methods of preparing walrus for food are practiced.
- 1653 • Community activities associated with walrus hunting (other than the hunt itself and subsequent
1654 preparation) do not appear to be extant in Little Diomedede. Additionally, some interviewees
1655 lamented a decrease in the interest in traditional forms of communication about walrus-related
1656 knowledge between young people and adults/elders. Blame for this was not infrequently placed on
1657 young people (it should also be noted that only adults and elders participated in this project), though
1658 not everyone did, and the lack of the *qagri* institution is also a noted and potentially contributing
1659 factor to this perceived social problem.
- 1660 • A number of hunting challenges were identified by interviewees. This included standard challenges
1661 a hunter faces like the weather and the ice. It also included ‘abnormal’ (or historically unique)

1662 challenges presented by contemporary circumstances, such as changing ice conditions, weather, and
1663 ocean current conditions; a breakdown in intergenerational communication about walrus-related
1664 knowledge; less walrus being around; large vessel traffic near Little Diomed Island; and the
1665 international border between Russia and the US which Little Diomed is directly adjacent to.

1666 • Interviewees considered walrus to be very important to themselves, their families, and the
1667 community. Walrus are considered the main subsistence source of food for the residents of the
1668 island, and a healthy form of food at that. Other reasons walrus was considered significant or
1669 important were its role in identity and constancy, the role of practicing subsistence in decreasing
1670 pollution, and the ability for carvers to carve ivory and sell it to provide for their families.

1671

1672 This project has demonstrated the utility and importance of Diomed walrus LTK and social science
1673 research for scientific, management, and policy considerations related to walrus. The project also
1674 contributes to local and regional educational and cultural heritage efforts. Finally, the project has a
1675 number of policy and management implications, including items noted by interviewees which are
1676 important for scientists, managers, and policymakers to take into account and/or address.

1677

1678 Some changes were made during the course of the project due to transportation difficulties involved in
1679 traveling to Diomed, as well as to changes in personnel. However, the original project aims were met in
1680 the end nonetheless. This project has synthesized and presented data which would be valuable for
1681 interfacing with scientific, policy, and management processes, including in the generation of questions,
1682 research problems, and hypotheses (e.g. What are the determinants of decreases in the walrus seen by
1683 Iñalit? What are the reasons for the difficulties in interfacing the knowledge of Diomed LTK experts
1684 with western science, policy, and management processes? What are the confounders which may be
1685 impacting the assessment of walrus population numbers? How adaptable are walrus when taking into
1686 account Diomed LTK and existing western scientific data? What is the appropriate level of concern
1687 about the current walrus population, when taking into account Diomed LTK as well as existing western
1688 scientific data? Is disease becoming an issue amongst the Pacific walrus population? Etc.).

1689

1690 Some areas which future work could engage, and key variables related to long-term policy, management,
1691 and monitoring which should be taken into account, include the following:

1692 • Are any noticed changes to walrus populations a result of decreased populations or differently
1693 dispersed populations? What are the confounders, including environmental confounders, in
1694 assessing this?

1695 • Is disease becoming a growing issue with the walrus population?

- 1696 • How can western walrus-related policy, science, and management better interface with and take
1697 into account Diomedes LTK, subsistence rights and concerns, and methods of empirical observation
1698 and knowledge-generation into their practices, products, and measures?
1699 • How can the systemic negative effects of aspects of modernity (e.g. anthropogenic climate change)
1700 on Diomedes be addressed, and how can all policy and management (including that which is walrus-
1701 related) be made to take this into account?
1702 • How can future impacts related to walrus populations resulting from climate change be addressed
1703 through work on the causes of these impacts rather than via unfairly placing the burden of
1704 conservation on a hunting community which does not have a negative impact on the walrus
1705 population and possesses a record of long-term stewardship of resources?
1706

1707 **Management or Policy Implications**

1708 There are a number of key implications of this report for resource management and policy:

- 1709 • Diomedes LTK of walrus, and Inupiat people, society, culture, and history in general, should be
1710 interfaced with, worked with, and respected on an equal footing in scientific, policy, and
1711 management processes. A recognition should be made that Diomedes LTK of walrus contains
1712 valuable knowledge and also has the capacity to extend scientific knowledge in its content and
1713 methodology, and that interfacing with it is necessary to create more robust analyses. Interfacing
1714 with this LTK, as well as recognizing Inupiat rights and history of resource stewardship, is also
1715 necessary to create not only more informed but also more just and fair outcomes and analyses.
1716 Indigenous knowledge holders should be consulted early and often in all scientific, policy, and
1717 management activities which relate to them, and their input should be respected, valued, and taken
1718 seriously. Additionally, it is recommended, with regard to concerns over the future of Pacific
1719 walrus populations, that shifting the burden of conservation unfairly to Inupiat people (considering
1720 that causes of ecological concerns lie elsewhere), for whatever reason (including but not limited to
1721 political expediency and/or an inadequate consideration of the excellent Inupiat history of
1722 stewardship regarding walrus populations) not be allowed to occur. Rather, it is suggested that,
1723 despite impediments to addressing the root causes of concerns (i.e. anthropogenic climate change),
1724 a way should be found to address and focus on these concerns by researchers, policymakers, and
1725 managers; further, it is suggested that attempts to do this cooperatively with Inupiat be made, who
1726 share an interest in the effects of climate change being addressed appropriately.
1727 • Social science research, especially with LTK holders, should play a prominent role in marine
1728 environment research.

- 1729 • Western scientists studying walrus should also consider integrating indigenous human-animal
1730 interaction types into their practice; indigenous relationships with animals are often based on long-
1731 term intimate contact with animals, allowing for a rich understanding of their behavior, whilst
1732 western biological and ecological studies of walruses are often based on very little sustained close
1733 contact with these animals in their natural habitats.
- 1734 • More efforts should be put into gaining an adequate understanding of total walrus population
1735 numbers over time, and to measuring changes in those numbers (and tying them to particular causes
1736 wherever possible). This remains an unanswered question from this (and other) research on walrus.
- 1737 • Consider that enforcement actions against Diomed hunters have had a demonstrably negative
1738 impact on community and individual well-being whilst Diomed hunting practices do not have
1739 negative impacts on the walrus population.
- 1740 • There are concerns amongst community members over the impacts of pollution from a variety of
1741 sources on the environment and subsistence foods. Managers and scientists should work with the
1742 community to come up with effective means of addressing and monitoring the causes of this
1743 pollution.
- 1744 • Efforts should be made by relevant managers and policymakers to address or account for policy-
1745 and management-related issues and concerns raised by Ijalit during the course of this study. This
1746 includes:
- 1747 ▪ Studying and adequately addressing the already-evident (and likely to increase) impacts of
1748 shipping/vessel traffic as well as other commercial, industrial, and development activities on
1749 walrus and hunting. Additionally, Diomed should be kept informed about all vessel traffic
1750 near their community and subsistence areas; providing Diomed with a publicly-accessible, no-
1751 cost Automatic Identification System (AIS) so that hunters can track large ship movements
1752 would be a helpful step towards achieving this goal.
 - 1753 ▪ Taking steps to make it as easy as possible for Ijalit to conduct walrus hunting and kinship-
1754 related activities across the international dateline.
 - 1755 ▪ Ongoing efforts should be made to communicate concerns about any increase in diseases
1756 amongst the walrus population to Diomed.
 - 1757 ▪ Regulations and management of hunting activities pertaining to walrus should be kept to the
1758 necessary minimum. As noted elsewhere, this report's authors would suggest that those
1759 involved in these regulatory and management processes also respect the far longer-standing
1760 history of successful stewardship Ijalit have had with regard to human-animal relations than
1761 any western institutions have had when making decisions in this regard.

1762 ▪ Diomedede should always be consulted in the development of research activities which pertain to
1763 them, and these activities should be kept to the necessary minimum. As noted just above
1764 regarding regulations and management, it is worth reiterating here as well that it is
1765 recommended that those conducting research activities respect the far longer-standing history
1766 of successful stewardship Ingalit have had with regard to human-animal relations than any
1767 western institutions have had when working in this regard.

1768

1769 **Publications**

1770 No publications have resulted from this project as of yet.

1771

1772 **Outreach**

1773 The following outreach activities have been performed for this project:

1774

1775 Exhibitions/Displays/Demonstrations Developed

1776 A poster utilizing information collected during this project on the importance of walrus to Little Diomedede
1777 has been developed for the Native Village of Diomedede. This poster is appended to this report (Appendix
1778 3; see also Topkok et al. 2014). This poster is being printed and distributed to the Native Village of
1779 Diomedede, and is available to other interested parties throughout the region on Kawerak’s website at
1780 <http://www.kawerak.org/socialsci.html> .

1781

1782 Additionally, the data gathered during the conduct of this project has been organized and archived with
1783 the Eskimo Heritage Program housed at Kawerak, Inc.

1784

1785 Community Meetings

1786 Two community meetings in Little Diomedede and one in Nome were held for this project to disseminate
1787 draft results and receive feedback on those results: one in September 2012 (Diomedede), one in January
1788 2014 (Diomedede), and one in February 2014 (Nome).

1789

1790 Workshop Participations

1791 A workshop was held at the 2011 Bering Strait Regional Conference in Nome, Alaska to discuss work on
1792 the project to date and to collect additional data (Kawerak 2011).

1793

1794 Factsheets Produced

1795 A summary of methods for preparing walrus for consumption based on information provided by a Little
1796 Diomedes expert has been produced. This summary is appended to this report (Appendix 2). A glossary
1797 of Little Diomedes Iñupiaq walrus-related terms was also produced as part of this project (which has been
1798 appended to this report as Appendix 1). These two appendices are also being published as a separate
1799 bound document and distributed throughout the region (this is also available for download on Kawerak's
1800 website at <http://www.kawerak.org/socialsci.html>).

1801

1802 Radio/Television Interviews

1803 Project Co-Investigator Julie Raymond-Yakoubian was interviewed about this project (and others) by the
1804 Nome, Alaska radio station KNOM in October 2013. Followup interviewing about this project is
1805 planned.

1806

1807 Conference Presentations (Scientific and Non-scientific)

1808 Posters were presented on this project at the Alaska Marine Science Symposium in 2011, 2012, 2013, and
1809 2014 (E. Menadelook 2011, J. Raymond-Yakoubian and the Native Village of Diomedes 2012, B.
1810 Raymond-Yakoubian and J. Raymond-Yakoubian 2013, M. Topkok et al. 2014), and the Western Alaska
1811 Interdisciplinary Science Conference in 2013 (B. Raymond-Yakoubian and J. Raymond-Yakoubian
1812 2013). An oral presentation was also made about this project at the Alaska Anthropological Association
1813 annual meeting in 2012 (J. Raymond-Yakoubian 2012).

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Appendix 1: Little Diomedé Iñupiaq Glossary of Walrus-Related Terms

Little Diomedes Iñupiaq Glossary

KEY

sg. = singular form of noun or verb, indicating one, e.g. “you”

dl. = dual form of noun or verb, indicating two, e.g. “you two”

pl. = plural form of noun or verb, indicating three or more, e.g. “you all”

Note: verb stems require an ending to be complete, e.g. the verb stem aġut- “to steer a boat” + tuq [3rd person singular ending] = aġutuq “he or she is steering a boat.” Verb stems are given with a hyphen (-) following to show that they require an ending.

--A--

aa'aaŋiq – oldsquaw, long-tailed duck

aagluit – killer whale

aaka – mother

aakaiqtaq izagvak – an orphaned walrus with no mother

aakauraq – elder sister

aana – grandmother

anauran – your little grandma

aaŋaq – father

aaŋauraq – older brother

aġagriq – ptarmigan

aġinaniq – fermented food, “stink food”

aġġinaq – sealskin backpack

aġġirugut – we are holding a dance

aġġutaq – a container for meat, made of walrus stomach

aġiaġuq – stomach

aġinaq – fermented walrus head



Women removing blubber from walrus hides, 1950s. (Eskimo Heritage Program)



Queenie Milligrock (mother) and children. (Eskimo Heritage Program)

agituvaktuq – it is very expensive

aglanerj riiqtuaq – he is reading something written

aglatuaq – someone who is writing

agliusrinagu – do not take a picture of it!

agliusrinasi! – do not take pictures [you pl.]!

agliutuun! or **agliusiu!** – take a picture of it!

agnagan – female parallel cousin, child of mother's sister

agnagatea – s/he's my female parallel cousin

agnamek aivatunja – I got a female walrus

agnaq or **agnaq yugguaq** – female, female walrus

agnazaluk – female animal

agninaak [dl.] – tusks of young female walrus

agninaq – female walrus, not full-grown

agraa – gloves

agrait – forepaws

agruani – on the north side of Little Diomede

agua – walrus saddle, just below ribs (also for other animals, humans); boat stern

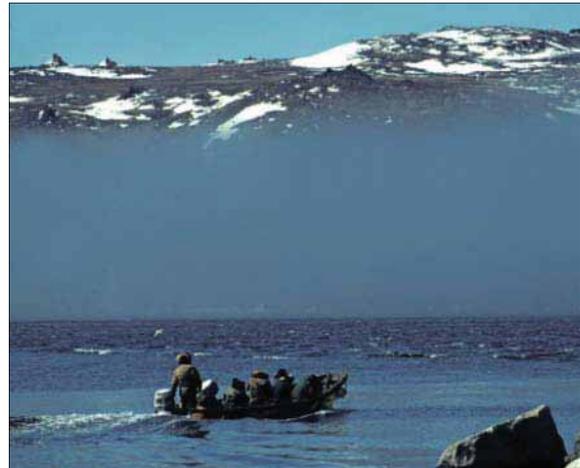
Agupiaġruk – name for a place on the south part of Little Diomede

agupsaani agupiruaq – man sitting in position #4 (see end of glossary for diagram) gets the breast share of walrus

agut- – to steer a boat



Women reading and writing. (Eva Menadelook, Eskimo Heritage Program)



Man steering boat. (Eskimo Heritage Program)

aġute – the one who steers in stern of boat,
generally the captain

aġutuaq – he is steering a boat

aġuun – rudder, also a wide paddle used for
steering

aġuvitisi! –sit down [pl.]!

aġuvitin! – sit down!

aġvsaaq – back seat in a skin boat, where
elders sit

aġvaluaq – gray whale

aġvaniaqtut – they are whale hunting

aġveq – bowhead whale [pl. **aġvit**]

aġviaa, aġvituq – (he/she/it) goes east

aġviagnituq – current is going toward the west

aġviniaq – whaler, whaling ship [pl. **aġviniat**]

aġvinilit – six

aġviuktunja – I am going to the south side of the
village

aġvizuaq – porpoise

aiga – my sister-in-law (brother's wife)

aimaq – walrus skin pack for carrying lots of
meat

aimauraq – day pack, small backpack

aiparaq – raw or rare meat

aipayaaqtuu – cook it a little! Make it half-
cooked, rare

aiqatek – pair of mittens

aivatunja – I killed a walrus



Men hauling a walrus on to the ice. (Eskimo Heritage Program)



Pack for carrying supplies. (Eskimo Heritage Program)

aiviniq – aged walrus blubber

akkaa! – lots! so many!

akmaᅇasaq – east side

akmuinaq – toward the east side

akpalik – least auklet

aksratuaq – something that rolls

aksratuq – it is rolling

aleq – walrus-skin harpoon line [plural **aᅇlit**]

aᅇaagani – last year

Aᅇfagarimiut – qagri on south side of island

alluaq – breathing hole for seal or walrus

aluiᅇaq – sourdock from the lower part of Island
(closer to beach area), very sour (long leaf)

aluk – crowberry (*Empetrum nigrum*)

aluun – tongue (cooked and sliced)

amaᅇlatut – they are many, there are many of them

amakᅇatat [pl.] – last walrus to come to Little Diomedes in spring, they have green on their palms and near their mouth (maybe from Round Island)

ameksraq – dried walrus hide

amigatut – they are few, there are few of them

amiglatuat yuᅇᅇuat – walruses (few)

amiksraq – outer part of a split walrus skin used to cover a skin boat, or used to form a barrel to store blubber



Agnes Menadelook collecting greens. (Etta Ahkinga)



Boat crew, paddlers (see next page). (Eskimo Heritage Program)

amiqtut – they (women) are sewing a boat skin;
they (men) are putting skin on a boat

anauvaun – bird net on end of a long pole

anuqazuk- – to be breezy, to be a breeze

aᅇemarun – screwdriver

aᅇimaaq – half-dried meat or fish

aᅇimatut – they carry boat over the ice to open
water

aᅇuaq- – to paddle

aᅇuaqtet – boat crew; paddlers

aᅇuaqte – boat paddler, person who paddles

Aᅇuniaqizitauq! – You [pl.] go hunting! (said to
killer whales)

aᅇusaluk – male animal

aᅇutaᅇan – male parallel cousin, child of
father's brother

aᅇutaᅇatea – my father's brother's child, e.g.
my cousin

aᅇuun – a paddle

aᅇuyak- – to fight a war, do battle

aᅇuyaktut – they fight a war, do battle

aᅇuyuuqte – soldier

aᅇlilit [pl.] – fancy elbow-length dance mittens
with dangling ivory pieces attached
(originally puffin bills)

aᅇpik – cloudberry (known locally as
'salmonberry')

Aᅇqaaya – John Iyapana's Iᅇupiaq name

aᅇsaagayuk – jaeger



*Women sewing skins for a boat cover. (Eskimo
Heritage Program)*



Cloudberry or salmonberry. (Meghan Topkok)

Araarak – Orville Ahkinga’s Iñupiaq name

asaagani – last year

Atneq – place on south end of Big Diomede
where there is a building

atninaqtuanun sawituaq – someone who works
with sick people, health aide

atninaqtuq – s/he is sick

atpa – murre

atpalik – least auklet

atqatuq – s/he is going down

atqauktuᅇa – I am going down

Atuayuq – Annie Ayahak’s Iñupiaq name

atuᅇak – ugruk hide

aukpalitiniq – red phalarope

aulatuq – she went picking greens

ava – sea lion, also grandfather

avaapazuk – giant

Avuuna – a man who went to live with the
walrus, as described in an important Diomede
story

avvazaaq – namesake

awataaq- – to moisten a drumskin

awataaqtuᅇa – I moisten the drumskin

awataun – water to moisten drumskin

awatavak – seal poke

awisalanᅇaraᅇnun tuugaaqatuaq – it has tusks
that point outward

awisalanᅇaruq uᅇuaq [dl.] – (tusks) that point
outward



Seal poke. (Eskimo Heritage Program)



*Walrus with tusks that grew outward. (Joel
Garlich-Miller, USFWS)*

ayagutauraak [dl.] – two sticks that form a frame to elevate caught birds (puffins, auklets) when suspended. Hanging live birds are strung through the “nose” to serve as decoys to attract others.

ayatak – board on which walrus hide is split

ayaupiaq – cane, walking stick

aziaq – pink plume, bistort

Azikazik – a shaman and healer, who appears in the film *Eskimo*, and who healed Oscar Ahkinga after he fell from the church onto rocks. He knew all shamans down into the Yupik area. He helped to find the King Island woman who fell off the cliffs. He died for two days and then stood up again. He would swallow all sorts of things, like needles, but gave them back when he died, taking them from his mouth.

--E--

eeraq – kittiwake

eerun! – throw it out!

eet- – to throw out

eetkia – I threw it out

egaaq- – to cross, come across; also to cross to the Diomedes from East Cape, Siberia

egavaġaatut – they are coming from the west, from direction of Big Diomedede

egavatut – they crossed to Little Diomedede from Big Diomedede

egeq – sea

egeqsiuġataqtut – they went by boat to the mainland from Diomedede



Bering Sea around Little and Big Diomedede. (Julie Raymond-Yakoubian)



Pink plumes. (Kawerak Natural Resources Division)

eglatut – they are smiling

eglauk- – to smile

eglituaq yuġġurat or **puugratuaq** – swimming or traveling walruses

eglu – house (old word)

egluuraq – old word for a little house

egluvak – warehouse (modern style)

eġmilaq – there is no water

eġmun – bottle

eknuik – woodstove (mainland word)

eġtuk – sling

emeġnitua – I have water now, have gotten water

emeqtaq- – to fetch water

emeqtegega – I gave him a drink, let him drink

emeqtiaa – he gave it a drink (including a dead seal)

ene – house (of any type, including a sod house)

enepiaq – old-style house constructed from rocks, wooden sides, and with sod insulation on outside

eġethaq – seal retrieving hook

eġethataun – wooden part of seal retrieving hook

eġnigaat – they “trampled” it, group of walrus smother an animal under them

eġnitaq – walrus that died under a pile of animals

eqluq – large intestine



Swimming walruses. (Etta Ahkinga)



Modern style housing. (Julie Raymond-Yakoubian)

eqpeenait! – leave them alone!

eqpeenaun! – leave him/her alone!

eqpeenilaqut – we left him alone

ereġaq – hiding person

ereġin! – hide!

Ereġnimiuruat – place name “Falling Rocks”
(where rocks were about to fall and did fall)

erek [dl.] –eyes

ereq- – to hide

ereqsrak – sinew

eret- – to fall

esrrailaq – it got warmer, after having been
very cold

euneq – ice pile

euruq – ice piles up, forms frost heaves

ewek – blade of grass [pl. **ewiit**]

ewethainavauraq – there is lots of grass

--|--

ialiq – window

iggiaq – throat

igiaġaa – s/he split it (skin for boat)

igiaġraq – meat taken off of blubber and buried
under rocks to age

iġiak – deep-water bullhead

igiaq- – to split skin for a boat covering

igiaqsiruaq amiksramenġ – a split walrus hide

igiaqsiruaq – she is splitting a walrus hide



Eyes. (Julie Raymond-Yakoubian)



Alice Kayouktuk splitting a walrus hide. (Eskimo Heritage Program)

igilik – wounded walrus (or other animal)

iglawik – intestine

igmituq – he is washing his face

igniruaq – giving birth (human or animal)

igviivik – washtub

igvituq – she is washing clothes

liṇaq – Ruth Milligrock's Iñupiaq name (Patrick Omiak's sister)

ilaḡanameeṇ – thank you!

ilarak – ovaries [dl.]

iffaliaq – fermented kidney; also used as verb: to eat fermented kidney

iffaliaqtuṇa – I ate fermented kidney

illuq – cross-cousin [dl. **illuik** – two cross-cousins]

imaniq – clam (any type, eaten by walrus) [pl. **imanit**]

imaniraktuaq – walrus stomach filled with clams

Imaqtiq – main village on Big Diomedede, also Big Diomedede Island

imitqutailaq – arctic tern

imma tayaqtuaq! – a plane can be heard in the distance! A plane is coming!

Imṇana – Elizabeth Milligrock's Iñupiaq name

imuuraq – coil shape into which intestines are wound after they are inflated

Inuasiaq – John Norbert



*Gathering clams from a walrus stomach.
(Eskimo Heritage Program)*



Island and village of Little Diomedede or Iṇaliq (see next page). (Julie Raymond-Yakoubian)

inuksiutit – small arrows used to fire on people

Inupiuraaqtuq – he is speaking Inupiaq

Injalim nataani – south side of Little Diomede Island

Injaliq – Little Diomede Island

injanizaq – way over there

injituq – very big whale

inuġiq – “Eskimo cabbage” [pl. **inuġit**] (*saxifrage divurica*)

irailin or **erailitik** – intestine raincoat used by kayakers to tie onto the craft, to be waterproof [sg. and dl.]

itaagayuk – junco

itaaguaatin – if it brings you in

itaġin! – come in!

iteq – anus

iteqsraq – ice cellar in permafrost

itigait – hind paws

itiptawik – place name for the second cliff south of village

itqauktuġa – I am going northward

ittuaq – seat in skin boat [pl. **ittuġat**]

iugaq – mallard

iuguaq or **yuġġuaq** – walrus [pl. **yuġġurat** or **yuġġuat**]

ivlauq – seal fetus

ivlit quiniin! – you get the “qui” share of the walrus



“Eskimo cabbage”. (Etta Ahkinga)



Man hanging baby walrus (see next page). (Eskimo Heritage Program)

ivun – oar

ivuruut – outboard boat motor (from Evinrude)

izaġuq – wing

izagvak – baby walrus

izagvalik or **izagvalaaq** – female walrus
swimming with a baby

izaqeruq – it is flapping its wings

izi – drumskin

izigvik – stovepipe

iziksraq – membrane from walrus stomach used
for a drumskin

iziksraq paneqsiruaq – inflated drying walrus
stomach

izivaniq – piece of walrus meat aged in meat
hole [pl. **izivanit**]

izumaaluin! – think!

izumaaluq – to think

izumaruġa – I am worrying

--K--

kagiagun – whale lance

kakkaagun! – take off the head bone!

kakkaaġ- – to take front head bones and tusks
off of a dead walrus

kanakġaq – to blow, of west wind

kanakġauġaa – west wind has begun to blow
(brings ice with game)

kanaqtuq – he had a heart attack

kanayuq – shore bullhead (red)



Mother swimming with a calf. (Joel Garlich-Miller, USFWS)



Inflated walrus stomach hanging to dry. (Julie Raymond-Yakoubian)

kanjīgaq – corner

Kanjilik – Bessie Menadelook’s Iñupiaq name

Kanjīq – very top of Diomede Island, the highest peak

kanjīq – peak, tip

kanjia or **kagġa** – its tip

katimaruak – they two meet (could be people or tusks)

kaugutaq – hammer

kauk – walrus skin (eaten as food); “coak”

kauktunja – I am hammering something

kaumiin! or **kaumegisi!** – push off!

kaumituat – they pushed a boat into the water

kauniaqtunja – I have to reach into the crack for birds, eggs

kaurunja – I reach into a crack, cleft in rocks to get chicks or eggs

kavegaa- – he harpooned it (a whale; Big Diomede word)

kavenjilaa – he missed it, did not succeed in harpooning (a whale)

kavuqtuit! – spear them!

kavuugun or **kavuun** – spear, walrus harpoon

kazak- – to beat a drum

Keekmiuraaq- – to speak Wales dialect Iñupiaq

Keektuaksiuqtut – they (Wales people) come toward Diomede for May hunting, when they pull their boat to open water

keeraq- – to crimp a hard sole, esp. with teeth



Men dancing to the beat of drums. (Eskimo Heritage Program)



Eggs. (Kawerak Natural Resources Division)

keeratuq – she is crimping a sole

keeraġaa – she is crimping it

keerauŋ! – crimp it!

kemagluk – long leaf sourdock from the top of
Little Diomed Island

kenekpatuq – it is very high

Kesrremuinaqtuŋa – I'm going to Lavrentiya

Kesrreq – Lavrentiya

Kesrretuŋa – I went to Lavrentiya

Kesriukpizii? – Are you [pl.] going to
Lavrentiya?

kiagiq – shoulder-blade

kiakiauraq – gyrfalcon or peregrine falcon

kiakŋazaq – way up there

kiataa – its torso

kilik- – to scrape (an intestine to remove the
inside lining)

Kiŋilit – placename for a location on south side
of Little Diomed Island where boats are
launched

kiŋuagun suli – next time again

kipkat or **kuapeġaq** – spine vertebra, backbone
[pl. **kuapeġat**]

kiutiq – tooth [pl. **kiutit**]

kiuva siuvaten? – who is your bowman?

kuapeġaq – spine [pl. **kuapeġat**]

kuguuteraq – fire starter



*Queenie Milligrock wearing hard bottom soled
kammaks. (Eskimo Heritage Program)*



Walrus teeth. (Julie Raymond-Yakoubian)

kumagilik – ice that has signs of walrus having been there

kumagitaq – sea mammal out of water on the ice

kumagizirug – he (a hunter) is going after an animal on the ice

kumagvik – place where walrus have been, dirty ice

kumaᅇnat [pl.] – lungs of any mammal

Kuᅇa – village on north end of Big Diomede

Kuuk – creek south of the village of Little Diomede

Kuukpait – name of a stream on Big Diomede Island

kuusiq – pelvis bone

kuutaq – waterproof raingear or windbreaker made of **ugruk** (bearded seal) intestine

kuuturaq – intestine prepared for use as a raincoat, doorway cover, or windowpane

kuyaa – its pelvic area (animal or human)

Kuyanna – Queenie Milligrock’s Iñupiaq name

--L--

leᅇleq – goose

ᅇiᅇauga – Alice Kayouktuk’s Iñupiaq name

--M--

maimiun or **maimiutaq** – toggle on harpoon rope to keep it from slipping when one holds it, made of walrus teeth with hole in middle, with personal designs, such as a walrus head



A walrus on the ice. (Joel Garlich-Miller, USFWS)



Goose. (Kawerak Natural Resources Division)

makmaun – backpack

malik – swell on the ocean [pl. **maglit**]

mallituq – there are swells on the ocean

malukali- – to be rabid, of animal

malukaliruaq – it is rabid

mamaun – walrus mammary gland

manaun – rawhide line to attach or hang birds which were caught

manᅇiniagrᅇᅇ – go get eggs!

manᅇiq – egg

manᅇituq or **manᅇizimaruq** – she got eggs

mapkuq – inner part, inner half of split walrus skin

mapteaq – “white-man style” house (Big Diomedede word) or Siberian-style walrus skin covered house

massiinat – machine, snow machine (from English ‘machine’)

Mayuaᅇalik – cliff on Diomedede Island

mautut – they are hunting on the ice

mayaqtivaktuaq yuᅇᅇuaq – skinny walrus

mayiᅇaa – ice goes far north, because of the current from the south

mayuaqtuq – he is climbing up the island

Mayuᅇuraq – Diomedede place name (meaning ‘where you climb’)

mayuᅇutuᅇa – I am going upward (climbing)

meglit [pl.] – rocks on sides of old houses



Little Diomedede, “white-man style” houses. (Julie Raymond-Yakoubian)



Annie Iyahuk splitting walrus hide (see arrow indicating inner half of walrus skin). (Eskimo Heritage Program)

Melegruaq – Spike Milligrock’s Iñupiaq name

melgaariq – Siberian word for rifle

mervik – landing strip

mervimin taatut – they are coming from the airport

meteq – eider duck

metiapak – any big duck

miñuaq – cottongrass roots (gathered by mice, “mouse nuts”)

mitquq – feather

mittauraq or **mittauraaziun** – bone used to prop up the head of a dead crested auklet, done in August, to make the auklet appear to be alive in order to attract others (dl. **mittauraak**)

mizigaq – seal or walrus oil used for dipping food in

mumeq – drumstick

--N--

naġaqpanjilaq – it is not too low

nagasuq – bladder (used for water storage)

naġiktuurauruq – it is low

nagimatut – they lost their bearings, in weather or drunken stupor

nagin peruat? or **nagit piat?** – where do they come from?

nagruña – I went straight across to East Cape

nagrut – they went straight across to East Cape

nalikak [dl.] – pants



Helicopter landing. (Julie Raymond-Yakoubian)



Feathers. (Julie Raymond-Yakoubian)

naluagmiutamenj eneqatuq – he has a white-man style house (Little Diomede word)

naluaq – seal or ugruk skin hung out to be bleached by weather

naluk – to dive (a seal or walrus)

naniġuun – lantern

naniq – lamp

nanuaviniq – piece of polar bear (skin or meat)

nanuayaaq – young polar bear

nanuq – polar bear

nappatat [pl.] – walrus sleeping in the water with their air sacs filled

Naqqak – Stanley Ahvaaklook’s Iñupiaq name

nassiik – pair of sealskin pants

nataaġnaq – type of fish (not a flounder as on the mainland)

nataquq – cartilage

nateksraq – “hard sole” for mukluk

naulaaqtuunġ! – go harpoon it!

nauligaa – he harpooned it

nauliq- – to spear, harpoon

nauliunġ! – harpoon it!

naulizaun – spear for game

naunġ! – said when someone enters a house, answered with **Naami!**

nausaniuragaġunġ – wait for it a little

nausaniuragaqġagut – we waited a little for it



Polar bear skin. (Meghan Topkok)



Harpoon. (Julie Raymond-Yakoubian)

nausiat – plants

navaaqtuq – tree

navaġan or **navaqte** – mast

nayak – younger sister

nazaufek – emperor goose

nazaufuauraq – smaller goose

neeqliq – one farthest north

neeqpamun – (strong) north wind

neeqpatuq – north wind is blowing

neġluaa – he broke its neck, as was done
sometimes with seals and baby walrus
caught

neġlutuq – it broke its neck

neġluuktutin – you will break your neck! (said
as a warning to children playing
dangerously)

negriagruk – spider

negriagruŋ! – go get eggs!

negruaa – he is lowering him down the face of a
cliff by a rope

nemeq – to swim around under breathing hole,
under the ice, of a bearded seal getting
ready to surface

nenauk – brother-in-law

nenayuq – open water crack in ice

nenaugaq – son-in-law

niaqiun – rope attached to the snout of a
walrus to tow it

niaqsiaq – young woman



Open water between pans of ice. (Meghan Topkok)



Three young Diomedede women. (Eskimo Heritage Program)

niaquq – head

nikpatuaq – hunter waiting for a seal to surface
in breathing hole

niksik – gaff, something with a hook on it

ninjq – share of meat

ninjqizi! – get shares!

ninjqtuq – he got a share of meat

niu – leg

Niuuvak – Albert Ayahak’s Iñupiaq name
(means ‘housefly’)

nivisaq – “sucker fish” that sticks onto rocks

nivisaniaq – to go to get a sucker fish

nugaq – younger brother

nugaq yugguaq – bull walrus

nugaqliq – youngest sibling, youngest child of a
family

nugatpiaq – young man or young male walrus

nugatpiyaalak or **nugatpizaasiq** – young male
walrus

Nuggazaq – Edward Penatac of King Island’s
Iñupiaq name

nuilak – parka ruff

nukkinaak [dl.] – tusks of a young male walrus

nukkinaq – male walrus, not full-grown

Nunagirat – place name of a cliff on Big
Diomedes Island

nunavak – walrus on top of the ice [pl.
nunavait]



Paul Soolook (see parka ruff). (Eskimo Heritage Program)



Walrus on the ice. (Joel Garlic-Miller, USFWS)

nunavatuq – it (walrus) is getting up onto the ice or it got onto the ice

nunavayuniat [pl.] – many walrus on (scattered) ice

nunavraqpaliarut – they must be killing walrus (out of the water)

nunavraqtut – they (hunters) are killing walrus, which are out of the water (said when you can hear the hunters, but cannot see them)

nunayatunja – I am camping

nunivautet – berry comb

nunuq- – to scold

Nuugatuja – I went to Naukan

Nuvaaluk – Edwina Omiak Krier's Iñupiaq name

--P--

paagun – high cloud (probably, cirrus) that indicates wind

Paamii – a Chukchi man (Suksi in Iñupiaq)

paaq – entryway

paganjaruak [dl.] – bent tusks (that do not grow straight out, but bend downward)

pagutuk – cormorant

palak- – to be too much

palliq – wick

palliraq – moss used for lamp wick

pamiuq – mammal tail

pana – spear (used even for walrus, after it has been harpooned)

panagaa – s/he speared it



Walruses scattered on ice. (Joel Garlich-Miller)



Qaġri entry. (Eskimo Heritage Program)

paneqtuaq neġe – dried meat

paneqtuumaruat yuġġuram tulimait – dried walrus ribs

paneqtuumaruat yuġġurat neġait – dried walrus meat

paptu – wood drum handle

Paugaq – Elizabeth Milligrock’s Iñupiaq name

paugriruq – puts something underground or snow or ice, as meat to cache it

pautuk or **pagutuk** – cormorant

pauvyuak- – to cough

pavaġliraqtuat or **neġuaqtuat yuġġurat** – feeding walruses

paveġuq – fish tail

Payana – Dwight Milligrock’s Iñupiaq name

peneksraq – dry grass used for insoles

peņuktat [pl.] – lumps on the skin of old bull walrus; small knolls

peņuq – frost heave, hump

peņurainauruq nuna – the land has “bumps” on it

perektuq – he/she/it went down

peruniaqtuņa – I am hunting for chicks, using a small hook if I can’t reach into a crack

peruq – auklet chick

pilak- – to butcher an animal

pipsiraq – dried fish

piqqaagruk – young kittiwake



Drying meat. (Etta Ahkinga)



Man hanging auklets to lure birds before capturing them with a net. (Eskimo Heritage Program)

pizukaagruk – fox

pualaruaq – s/he is dancing

pualatut or **pualarut** – they are doing a
common dance

puiġagait – they blew them up, inflated them

puiġaa – s/he blew it up

puiqtuq – they inflated something

pukta- – to float

puktaaġ – floating ice pan, ice floe

Puqtuġmiut – Puqtuut **qagri**

purumuusiq – old-style kerosene stove (loud);
primus stove (from the word 'primus')

puuġaa – caught a bird with a net

puuqtunġa – I caught birds with a net

puuvratuq – it is swimming (active swimming,
not a fish)

puvlatut – they smell something

puvluavut, naluktut – they (walrus) smell us
and dive

puyalainavauruq – there is a lot of steam, as
from a large herd of walrus

puyuq- – to be a dark cloud over open water

puyuqtuq – there's a dark cloud over open
water

puyuqtut – they're going after a whale (boat
crew)

--Q--

Qaaġ – place name for the top of Diomedes
Island



*Ice floes move past the village of Little Diomedes.
(Eskimo Heritage Program)*



*Dark clouds over the Bering Sea. (Julie
Raymond-Yakoubian)*

qaga or **qagaq** – root of **aziaq** plant or pink plume plant

qagaqpazimeaa – there are walrus hauled out on the beach

qagisaq – pole with net on the end to catch birds

qagitaq – brain (animal or human)

qaglutaq yugguaq – the walrus call or make a sound

qaglutut – they (animals) call, or make a sound

qagna – mouth [its mouth]

qagri – a political, social, ceremonial and educational institution in Inupiaq communities

qagri- – to go to a **qagri**

qagrim inuit – **qagri** members

qagriruaq – he went to a **qagri**

qagruq – arrow (Eskimo style)

qagutuaqruk – shearwater (also known as the “walrus bird”)

qaigit [pl.] – waves onshore, breakers

qaigulik – ribbon seal

qakkuin! or **qaktutin!** – come in, meaning literally ‘climb up’ as from the **qagri** tunnel into the house

qaknaaruak or **qatinjaruak** – tusks that touch at the tips

qakneq – walrus on the ice, out of water



A walrus on land. (Etta Ahkinga)



A ribbon seal. (Kawerak Natural Resources Division)

qaknivak – walrus on ice that look like an island from the distance; large walrus herd, or a big walrus on ice

qaksrut [pl.] – sea mammals out of water on land

qaksrut – they climbed up

qalatuq – something boiling

qalausriruq – she is boiling something

qathavak – axe

qaluaq – blue cod or meat hole (see also following term)

qaluaq or **ea** – meat hole (for storage and aging of meat; greens go in smaller holes with wood covers; auklets go in gunny sacks with walrus meat) where meat is stored until October

qaluaqpak – “codfish” (Arctic pollock)

qalut [pl.] – rocks on the beach

qaluviaḡuḡ! – lance it!

qaluviaq – whaling lance, also used for walrus

qamaut – dogsled, freight sled

qamigatut – they are pulling a boat over the ice

qaneqsruun – telephone

Qapqamiut – highest **qagri** on Little Diomede

qaqtuuk – [dl.] bird net with a frame (same word as ‘lips’)

qaqqazuk – raven

qaqqin – root pick

qaqqirunḡa – I am digging with a root pick



Walrus herd. (Julie Raymond-Yakoubian)



Amy Iyapana in an “ea” (meat hole). (Eskimo Heritage Program)

qaqsrauq – loon

qatek – bird breast

qatjuatatut – they are going to leave

qatjutut – they left, departed

qatqit – to reach the top of something

qauneq – windowpane

qavsiniq amivisii? – how many skins did you get? (response: **Tallimanenq** – [I got] five)

qawaqsiagruk – young male walrus with short tusks

qawaqsilaaq – mother with young walrus with new tusks

qawaqsilik – female walrus with young (older than baby); also, place name on north end of island where people pick greens

qawaqsiq – harpoon line made of young or baby walrus skin

qayakaa – he hears an echo

qayaksaagaa – he is listening for an echo

qayaktuq – there's a echo

qayanilat – there is no echo, they have no echo

qayaqtutuaq – someone using a kayak

qayauruaq – it tipped over (a boat or sled)

qayuq – walrus or seal broth

qayuqtuuraq – Bering chickweed; also anemone, not distinguished from chickweed, anemone grows only in one place

qazigiq – spotted seal



Bird breast. (Julie Raymond-Yakoubian)



Jacob Ahkinga and friend make rawhide rope from baby walrus, Dora Ahkinga in background. (Eskimo Heritage Program)

qeḡemaruq neḡe – frozen meat

Qeḡqtamiuraaqtuq – he is speaking in the Shishmaref dialect of Iñupiaq

Qeḡqtamun aulaiḡugvisii? – Are you all going to stop at Shishmaref?

Qeḡqtaq – Shishmaref

Qeḡqtaruguvissii? – Are you all going to Kotzebue?

Qeḡqtaruḡmiut – people from Kotzebue

qeḡetuumaruat yuḡḡurat neḡait – frozen walrus meat

qeḡeḡeḡ! – lash it!

qelit- – to wind rope around in traditional rope making process

qelḡiaqatuq – there is an underwater rock or reef

qelḡiat [pl.] – rocks under water, reef

qeneḡautek [dl.] –binoculars

qeneḡsitaḡutit [pl.] – movie camera

qeḡaa – its nose

qeḡatek – king eider

qerriuqtuaq – someone cutting firewood

qeruk – firewood

qeruktain! – go collect firewood!

qetquaq – seaweed

qiapiq – seagull

qiaq – inside of walrus stomach, which is scraped, and eaten



Person using binoculars. (Joel Garlich-Miller, USFWS)



Flock of eider ducks. (Kawerak Natural Resources Division)

qiiyaqui! – a boat is coming! people are coming to the island by boat!

Qilaġruaġmiut – place name for a location on the south side of Wales

qilainainaq – sail for a boat

qilaŋaaġruk – puffin chick

qilaŋaq – puffin

qimaugatut – they fled

qimuksiagatuat [pl.] – dogsled racers

qissiq – when you make a handle through the skin or a split on the top of the head to tie a rope to

qitiqpiaqtuu – getting right in the middle

qitiqutanaqsiaa – it's lunch time

qitqa – its middle

qivuqaq – finback whale (with fin far back)

qizik – skin without hair, or tanned skin

quaġugvin? – do you want to eat frozen meat?

Quapegat – place on Big Diomed Island

quaqtak – fermented walrus meat sewn up to store and ferment; aged meat

quaqtatugut – we are eating aged meat (especially flipper)

quaqsiagruk – walrus with short tusks

qaqtuŋa teŋuŋmeŋ – I am eating frozen liver

Quġanaq – James Iyapana's Iñupiaq name

qugigaagruk – dovekie

qugruaknaq – large orange bottom fish



Rope attached to a walrus head, Enmelen, Chukotka. (Kawerak Subsistence Resources Program)



Walrus meat sewn up to be stored, Enmelen, Chukotka. (Kawerak Subsistence Resources Program)

qugruk – (tundra) swan

quġvik – “pee pot”

qui – walrus bottom flipper and entire bottom part of animal

quiktivaktuaq yuġġuaq – a fat walrus

qulepsiġ – walrus intestine stuffed with blubber

qulipsiun – cooking pot

qułuk – honey bucket

qumakłak – little cigar-shaped fish eaten by puffins and murre, which dive to get them

Quņa – village on north side of Big Diomedede Island

quņuliġ – sourdock (the small round ones), also known as oxyria or mountain sorrel [pl. **quņulit**]

Quņamiut – people of **Quņa**

quņasiġ – neck

quņjaliġ – seat behind the bow seat in a skin boat where senior hunters sit

quņjalituaq – second man, behind bow man in skin boat

quņuyuņaaq- – to smile

quppaq – crack (there is a big crack on top of the island)

quqquyak – (mythical) big polar bear with double ribs

quumatuġ – wooden vat, big bowl where urine is used to cure skins, also used by shamans to see distant people and scenes by looking into the liquid



Alice Soolook and Glen Iyahuk smiling. (Eskimo Heritage Program)



Glen Iyahuk and Alice Soolook, 2014. (Meghan Topkok)



Tundra swans. (Meghan Topkok)

quuqsruq- – to say ‘**quu, quu**’ which is a call for help

quvanuaq – snow bunting

quvanuaqpak – snow goose

--S--

saagit – chest, share of walrus “chest” given to elder crew member

Saatunuyait – place name

saayuq – upper part of storage shed

sagik – father-in-law

sagiuraq – mother-in-law

sagriq – artemesia, “stink weed”

sagvaligaa – current has begun and ice is coming

sagvaq – ocean current [pl. **sagvat**]

sagvaq savignatuaq or **sagvavaktuaq** – strong current

sagvatuq – current is moving, flowing

sagvaziun – compass (old word, thought to show where the tides would go)

sagvik – darting bomb for whaling

sailaq – sailor [from English]

salire – haircutter, barber

samuuna – toward the west, toward East Cape, Siberia

sana- – to carve

sanalgutit [pl.] –tools

sanaruaq – carving on a tusk



Ivory carvings. (Eskimo Heritage Program)



Ice in a current. (Eskimo Heritage Program)

Sanimaq – place name for a point of land on the west side of the south end of Little Diomed Island

sanivaat [pl.] – people crossing to the mainland by boat

sanivata! – let's cross to the mainland

sanivatuq – he crossed to the mainland

sapnaurut – they got stuck, e.g. in a storm

saqpiik – whale flukes

saqpiliaqtuq – its flukes are visible when the body is not visible

satkuq – bow

sauyaq – drum

sauyaq kazakaa – he is beating the drum

sauyatut – they (the women) are dancing in a seated position, doing a bench dance

savak – door

savakᵇazaq – west side of island

sayuᵇuyuuᵇuaq – parakeet auklet chick

sayuᵇuyuuq – parakeet auklet or sea parrot

sayuqtut – they are doing a motion dance

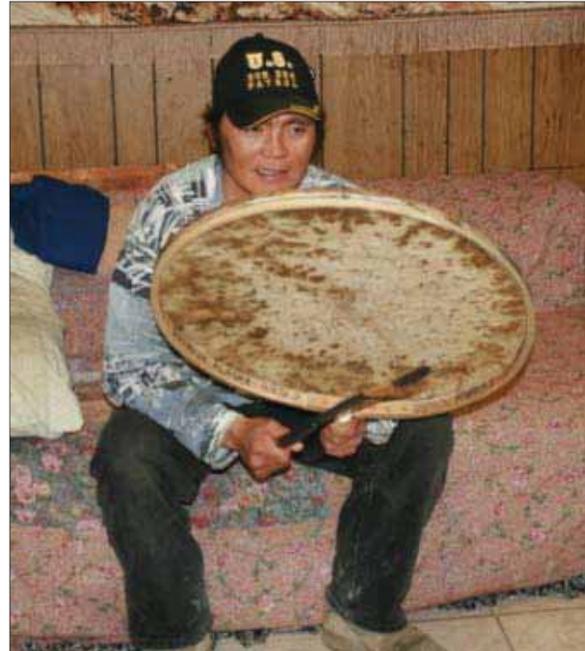
sayuun – song with fixed dance motions

siaqsraq – dried rawhide rope

sigguuk – [dl.] bill of bird; snout of dog, seal, or human

Siᵇnaq – Helen Pushruk of King Island's Iᵇnupiaq name

siᵇnaq – channel



He is beating the drum. (Julie Raymond-Yakoubian)



Plane on landing strip on sea ice (see next page). (Eskimo Heritage Program)

sigu mervik – landing strip on the sea ice

sigu qaviaqtuq or **qaviaqtugaa** – ice is far out but appears close

sigvaagruk – young guillemot

sigvaq – guillemot

siigak – saxifrage

siiqsianiq or **siiqsiaq** – raw sour liver

siklaq – pickaxe (used on ice)

silalutuq – it is bad weather

silu – drifted carcass

silugaa – it (the carcass) drifted ashore

simiagnaq – razor clam, large clam, siphon, or round clam found out from and north of village [pl. **simiagnit**]

siñailik – female animal with a fetus, pregnant female

siñairuq or **siñaiyauruq** – she is pregnant

siñaiyaq or **siñiaq** – fetus

Siqnazuami perut – they came from Nome

sitiqpatut – they are very hard

sitquliaqtuq – its flippers (walrus or whale) are visible when it dives, body not visible

sitquq – walrus flipper (fore-flipper or tail flipper)

Situgauranmiuguruq – he is a member of the **Situgauraq** qagri

siua – bow of boat

siugaani ipkua – people of long ago



*Walrus diving with just hind flippers visible.
(Julie Raymond-Yakoubian)*



Bow of boat. (Joel Garlich-Miller, USFWS)

siugruk – Coleman stove

Siuqamiuraaq- – to speak Siberian Yupik

siutaa – ear [its ear]

siuvate or **siuvatuaq** – bow man in boat, who sits on front right, ready to harpoon.

siuvatega – my bow man

siuvatuq – he is seated in the bow

siuvaukpiin? – do you want to be the bow man?

sugumaq – snipe or sandpiper

sumenᅇ anuvizi? – what did you catch?

sumenᅇ niᅇiqpin? – what share did you get?
(asked of hunter by his wife)

sunaiᅇun! – remove its gall bladder!

sunaq – gall bladder

sunaqsitut – they have bile in them and are not good to eat

sura – willow leaf, found on top of the island of Little Diomede

Sutpak – name of a location in the middle of Big Diomede; there's a creek with snow that doesn't melt in the summer. Little Diomede people went there to get water when they had none. Walrus often haul out near this location.

--T--

taanmuinaq or **taatut** – [they went] toward Diomede Island from the west

tagaq – blood vessel

tagraqtut – waves crash on the beach



Sandpiper. (Kawerak Natural Resources Division)



Waves crashing on the beach. (Meghan Topkok)

Taguupik – William Kaputak’s father’s Inupiaq name

taikaa palakman, sigu imna agviaa – ice moves toward East Cape, Siberia

taikanaguuaa – east wind has begun to blow

taikanaq – east wind

taisinurut – they got lost in the fog

taituk – fog

taituugaa – it got foggy

taksiruna – I won (at cards, etc.)

Taktuk – Moses Milligrock’s Inupiaq name

taliġuq or **taliq** – foreflipper of walrus, seal; human arm

talū – screen, barrier, could be a hunting blind of piled rocks

taqqiq – moon

taqtuq – kidney

taqtuq aginaziqtuumaruq – fermented kidney

tategraq – crane [pl. **tategrait**]

tavra qaa? – is that all?

tayaq – crested auklet

tayaqtuaq mittuq – a plane landed

tayuuq- – to sneeze

tegeruq – it flew away

teggutek [dl.] – pliers, literally “grabber”

telainainiq – sail

tenetkaa – it (an object) got blown away



Fog. (Eskimo Heritage Program)



Birds flying. (Julie Raymond-Yakoubian)

teḡmiaḡqhuḡziq – small bird

teḡmiaq – bird

teḡmiaqpak – eagle

teḡneq – someone who drifts away on an ice floe [pl. **teḡnet**]

teḡuḡaq – cooked sour liver, put away for winter

teḡjuk – liver (fresh)

teḡquuraq or **teḡquaq** – coltsfoot (*Petasites*)

tiivum qaaga – table top

tiivuq – table [from English]

tilaiḡaininek – with a sail

tilaiḡainitut – they are sailing

timik – inside “core” of tusk

tiḡmiuraq – auklet

traumii! – a ship is coming! (a call)

tugrun – lashing for the skin boat [pl. **tugrutit**]

tuktaq – walrus meat, including organs, tied in a waterproof bundle

tulak- – to reach something, in a boat

tulimaq – rib

tuluḡateut – it (the walrus) hit us

tunḡaq – black puffin [pl. **tunḡait** or **tunḡat**]

tupḡiraḡniq – fermented food, not too strong

tupḡitit – they aged (of meat)

tupḡivakait – they got very aged, very strong



Golden eagle. (Kawerak Natural Resources Division)



Men lashing a boat frame with a new skin cover. (Eskimo Heritage Program)

tipliziqnaun – not aging the meat

tupliziqtuŋa – I am aging the meat (pronounced **tuffiziq-**)

Tuqsruuraak – place name for an area near the south of the village of Little Diomede

Tunu – back of island toward Wales

tuŋuġaq – sour liver

tuugaam qupait – cracks on a tusk

tuugaaq – tusk

tuuġnagaa – he was haunted

tuuġnaġaqtuq – it is haunted [literally ‘it has ghosts’]

tuuġnaq – ghost

tuukaq – toggle spearhead

tuuġik – type of loon, smaller than **qaqsrauq**

tuumiagen – “picking bag” worn around neck, to put greens in when picking

tuusiniq – tusk with head bone attached

tuvautanaqsiaa – it is breakfast time

Tuveq – place name for a location south of the village of Little Diomede

tuwaiq- – to go out (the shore ice)

tuwaq – shore ice

--U--

Ualeq – Ualen (Siberia)

Ualituŋa – I went to Uelen

uaruq – female walrus is sitting with her young, or a woman with a baby



Tusk (see also cracks on tusk). (Julie Raymond-Yakoubian)



Tusks with skull attached. (Julie Raymond-Yakoubian)

ugamatuat – people pulling boat along the shore or along edge of ice

Ugineq – place name for the first cliff south of Little Diomedede village

ugiugaa – winter has come, winter is here

ugiuvamiuraaq- – to speak King Island dialect

ugiuksraaguaa – fall has come

Uguaksraq – Aaron Milligrock’s Inupiaq name

uguaq or **ugukhaq** – daughter-in-law

uilataġaa – lead is starting to open

uiniq – open lead, water

uituq – a lead opened up

ukkut [pl.] – rock blind for seal hunting

ukpek – snowy owl [pl. **ukpiit**]

ulemaun – adze

umegluk – front of walrus face, snout with whiskers

umialeraq – future captain, also a man’s name

umialik – boat captain; boat owner; boss

umiaq – large skin covered boat

umiaq tulugaa – walrus hitting a boat [literally: ‘it hit a boat’]

umiaqpak – ship

umiaqtut – they are hunting sea mammals from a skin boat

umiaqtutut – they are “boating”, hunting sea mammals from a boat;

umiaqtuzuilat – they do not go out boating



Winter on Diomedede. (Meghan Topkok)



Man in a small boat (see next page). (Eskimo Heritage Program)

umiayunjaq – one-man skinboat (sealskin)
which is rowed; a small boat

umiu- – to capsize

umiuraq – wooden whaling boat

umiurut – they tipped over in a skin boat

unaaq – harpoon for walrus or seal [pl. **unaat** or
uniġat]

unaqsiaq – wood

uniat – upright sled

uniġatin izakin! – pick up your harpoon!

unnuaq – yesterday

unuuta- – to eat dinner

unuutanaqsiaa – it is dinner time

unuutatunja – I am eating dinner

unagraq- – to be a north current, which takes
ice out

unagrauġaa – north current has begun

unagrimum – towards the northwest

Unagrġit – northwest

unagrġituamun – to become northwest

unagrġituq – there is a north(west) current

unalaugaa – south wind has begun to blow

unataa – the south side (of it)

unatmun – to the south

Unaukhyuk – Patrick Omiak's Inupiaq name,
known as **Tenjaari** or **Tenjaare** to Siberians

unmit – whiskers



*"Dinner foods" - ugruk, seal and walrus meats.
(Julie Raymond-Yakoubian)*



Walrus whiskers. (Meghan Topkok)

upkut [pl.] – lower part of modern-type shed
(attached to house)

uqqutaq or **uqqutauraq** – windbreak

uqsruaq – oil slick around dead sea mammal
from their blubber

uqsruaqḷuk – stove oil

uqsruluk – kerosene

uqsruq – fat, blubber

uqsruuraq – fuel oil, blubber for fuel

usrraq – fermented flipper or skin with blubber

usrruq – it lost its hair, the hair came off

uteḡninaḡiaumautin! – come home soon/early!

uteḡninaqsiaa – it's time to go home

utesirunḡa – 1 aged (walrus) meat or sealskin so
that the hair comes off

uti- – when hair slips off the skin after it has
been prepared and aged

utqiq – Eskimo potato

uukḷizuun – cook stove

uuktuaqḷuu – try it!

uumatiq or **uuman** – heart

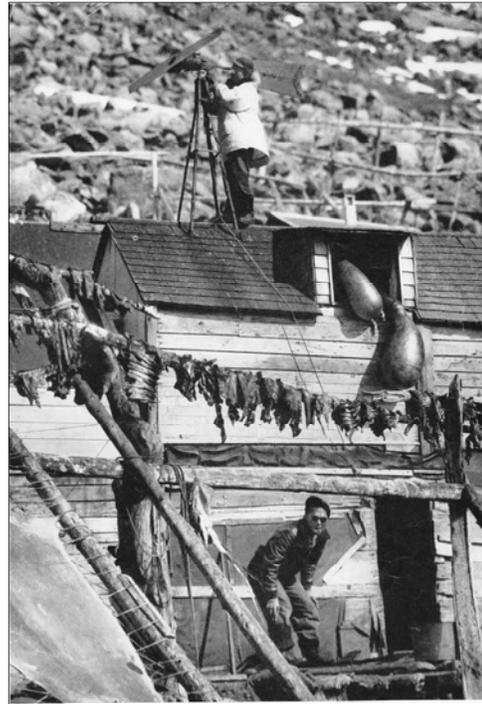
uunazaun – wood stove

uuraq – cooked fish

uutumaruat yuḡḡurat neḡait – boiled walrus
meat

uyaḡak – rock [pl. **uyaḡait**]

uyaḡauraq – little stone



*Shed. (Eskimo Heritage Program, L. Milligrock
Collection)*



Utqiq – Eskimo potato. (Etta Ahkinga)

uvagnaraq – spring

uvagnarqsiun – small skinboat used in spring, easier to handle than larger boat; taken to south side of Little Diomede Island with a dog team in the past

Uyaanauq – Inupiaq name of the father of **Avuuna**

uyuguaḡniaqtut – they are walrus hunting

uyuguaq qaksruq – the walrus hauled out, got out of water onto ice or land

uyugurat uutuumaruat [pl.] – cooked walrus meat

uzuk – penis, penis bone (baculum)

--Y--

yaanaq – rain

yaanituq – it is raining

yugḡayaak – pair of waterproof boots, of ugruk or seal (blood used to waterproof it)

yugḡuaḡniaqtuat – walrus hunters

yugḡuaq qeleḡuḡaqtuaq – walrus with a scar on its skin

yugḡuram iglawiit qalautiumaruat – boiled intestines

yugḡurat atqatuat – diving walruses

yugḡurat paamatuat – crawling walruses

yugḡurat puerat or **pueyatuat** – surfacing walruses

yugḡurat siniktuat – sleeping walruses

yuunjaq- – to whistle



Walruses hauled out on the beach. (Joel Garlich-Miller, USFWS)



Walruses surfacing. (Julie Raymond-Yakoubian)



Walrus sleeping. (Etta Ahkinga)

--Other--

Seats and positions in skin boat:

1. **siua** – front
2. **qunalik** – second seat
3. **qetqa** – middle place
4. **agupsaaq** – fourth seat
5. **agua** – rear seat



Hunters in skin boat – front of boat on left side, rear of boat on right side. (Eskimo Heritage Program)

Appendix 2: Little Diomedede Methods of Preparing Walrus for Consumption

Little Diomede Methods of Preparing Walrus

Compiled from interviews with Frances Ozenna

liver / tejuk

Raw Sour Liver (siiqsianiq or siiqsiaq)

Liver from a bull or female can be used.

- First, cut the liver into thin strips and place raw and uncooked into a (preferably glass) bowl to sour for as long as desired, roughly 8-10 days. The bowl can be lightly covered with cardboard or paper, but the liver needs air to sour properly. You keep the bowl indoors, on the floor. Check every few days by dipping your finger in to test if the liver is soured to your taste preferences.
- You can eat the soured liver with cooked flipper or coke. You can also dip the coke or flipper into the juice of the sour liver, like a condiment.

Cooked Sour Liver (tejugaq)

- Cook the liver in large chunks (it will shrink to about half that size as it cooks) that are 3-5 inches in diameter, on medium-high heat in a pot with spring or snow water (not chlorinated water) for about 30 minutes. As it cooks the blood will seep out from the liver and the liver will begin to harden or stiffen.
- Be sure to stir constantly to prevent the liver from burning. Cook until it's a little more than half cooked (not fully cooked), as it will 'cook' more as it sours. There will be a little bit of blood foaming from its center when it is done.
- Separate the liver from the liquids to cool and then mix again in a bowl, wooden barrel, porcelain crockpot, etc.
- Leave the liver in the bowl (or other container) to sour approximately 20 days, or up to a month depending on the temperature of the place where it is set, in a place that isn't too cold or too warm (such as out on the porch). You will be able to tell within 4-5 days whether or not the liver is in a place that is too cold and thus not souring. If so, change the location of the container to a warmer location to help it ferment. Or, if this does not help, it could be a sign that the liver was overcooked, when it does not sour as expected.
- When the liver is soured and ready to be stored in a barrel, dry the liver out for about a day before placing it in the barrel with seal oil.
- Alternately, instead of fermenting the liver in the pot, you can place the liver into a barrel and allow it to ferment either with the clear liquid broth or by adding snow to melt in the barrel, to prevent the liver from drying out. When liver is done fermenting, remove from it from the broth and enjoy. The sour liver will last in the barrel with seal

oil for long periods of time, but it tends to crumble if stays in the oil too long. For some families, this is the meat usually eaten first.

breast / mamaun

Dried

- Once you cut the breast meat away from the coke, you can remove it with part of the chest muscle/meat.
- Get a good sized triangle from the chest meat – about 1.5 feet in diameter – and cut into 2-2.5 inch strips, to form a coil. This way it will shrink and the inner side will dry a bit as well.
- Soak meat in water and then hang to dry.
- Hang the breast up to dry in the sun for about 15 days (so that it is about half dried). This will add taste to the meat, especially since not all mahmaun (breast) is filled with milk.
- Then cut the long strips into pieces about 1.5 inches long.
- Cook in water with salt on medium-high heat for about 35-45 minutes.
- Remove it from the pot and air dry on a pan for a day, then place in a barrel with seal oil. Meat will last as long as it is preserved in the oil.

chest / saagit

Boiled

The soft bone (in the chest) with meat attached can be cooked. In order to soften the bone and cartilage enough to be easily eaten the meat and bone should be cooked for a long period of time.

- Place soft bone and meat in a pot of water and cook for about 2.5 hours.
- Add onion and salt to flavor.
- If you have fresh greens, cabbage, roots or other vegetables you can add those as well.
 - Add roots and seaweed* about an hour before the meat is done cooking so the roots can soften.
 - Add about a quart of cut cabbage (or other similar vegetables) about 15-20 minutes before the meat is done cooking.

**Note:* the time of year that the seaweed is harvested should be taken into account when adding to the pot. If it is gathered in the early summer it tends to be thinner and harder, so you can add this seaweed when you first start cooking the walrus meat. Seaweed that is gathered in the fall, however, tends to be thicker and softer, and should be added later when

cooking. Alternately, you can cook the seaweed in a separate pot in order to prevent the taste of seaweed from overwhelming the walrus meat.

heart / uumatiq or uuman

Half-dried heart

- Best part of heart to half-dry is the thinner parts in the back of the heart (as it can be hard to chew on).
- Cut into strips and hang to dry in the sun.

Boiled heart

Best part to boil is the thicker, meatier parts of the heart.

- First, cut these parts into strips, about 1-1.5 inches thick/wide.
- Hang them to dry.
- Once the parts are dried cook them. You can cook these with clams (taken from the stomach, see later section on how to prepare these) and with some pieces of white cartilage. Some families do not fully cook and prefer the heart to be bloody.

kidney / taqtuq

Half-dried kidney for a barrel

- Split the liver in half and then cut the liver long ways into about 5 cuts that are approximately 2 inches thick, so that they are about the same shape as a round plate. You can keep or remove the outer membrane according to your preference, this membrane holds fat and flavor, and keeping it will add a chewy texture.
- Then hang the pieces to half-dry for 8-10 days, the pieces will shrink and age during this time. When it is done half-drying, cut the kidney into small sized portions and boil in a pot of non-chlorinated water for 30-35 minutes with salt.
- Remove the kidney from the broth and allow to dry for a day (to seep out any juice) and place in a barrel of seal oil. This way the meat will soften in the seal oil and be richer in flavor. However, you can also dry the kidney and place in barrel without cooking if you prefer.

Aged kidney

- Alternately, you can clean the kidney, slice it and place it in a bowl with a light covering, such as a piece of cardboard, light cloth, or paper, to age for 12-15 days (depending on the temperature of where it is placed).

- You can check the kidney periodically and test taste to ensure that you age the kidney as desired.
- When you are done aging the kidney, you can eat with cooked coke or store in a barrel with seal oil.

boiled intestines / yuġguram iglawiit qalautituumaruat

Intestines taste best when the fat on the outer intestines is not removed during butchering. If there is not much fat, insert strips of blubber inside intestines while aging to add richer flavor.

- First, rinse the intestines with non-chlorinated water and cut into 4 inch long strips and place into a large glass bowl or 2.5 gallon bucket (one intestine will usually fill up a glass bowl).
- Add some walrus blubber on top to keep from drying out.
- Age the intestines for 12-15 days.
- Once the intestines are done aging, turn them inside out and use a butter knife to scrape off the inner layer (it has a slimy texture). You can also squeeze off this layer using a paper towel.
- Cook the inside out intestines for 15-20 minutes on low or medium heat, leaving them a bit bloody.
- Add salt to water as desired.

clams from the walrus stomach (walrus stomach filled with clams: imaniraktuaq)

When the walrus stomach is slit open, wash contents with sea water to rinse off. Choicest clams are those that are not fully digested, as they are softer and fresher with red or orange tips. Since the clams have been ‘cooking’ and digesting in the walrus stomach, they don’t require much cooking, and the longer you cook them the tougher they will become. Once the clams are cooked, you can eat with boiled walrus heart (see earlier section on how to prepare the walrus heart).

baby walrus / izagvak

- Allow body of baby walrus to age for a day or two before butchering. You can do this by leaving the body on the beach, or outside your house, covered with a tarp or oogruk (bearded seal) hide to prevent bugs from getting into the body.
- Then cut the body into large sized chunks – flippers, chest, ribs, spine, etc.
- Tie parts together – e.g. flippers together, ribs together – and hang to dry at least 12 days depending on the weather (hot and sunny weather is ideal for drying).

- Bring the parts inside and allow them to sit in a box for a few days to age further. Then cut the pieces into smaller chunks and cook in pot of non-chlorinated water with salt.
- Remove chunks from broth and allow them to cool and dry, then place in a barrel with seal oil and throw out the liquid.

Note: When drying parts be sure to check for the presence of bugs or eggs. Wash these off with salt water. Don't cut slits in joints, or on the spine, so that there are no small crevices where bugs (such as flies) can lay eggs. You can cover the baby walrus with an ugruk hide (with no blubber on it) to prevent bugs from laying eggs while it ages prior to butchering.

Preparing izagvak for the meat hole (meat hole: qaluaq or ea)

- Leave the baby walrus out (but covered in a cardboard box, under a tarp, or under an oogruk hide) to age.
- Place the body in a meat hole around July.
- Take meat out not long after Halloween (or after the first snow, but before the first freeze up) and cut in half.
- Can eat the flipper and other parts you want at this time, as they are already fermented and will cook fairly quickly in a pot of salted water.
- The other half of the baby walrus can be put back into the meat hole to freeze, and be eaten later.

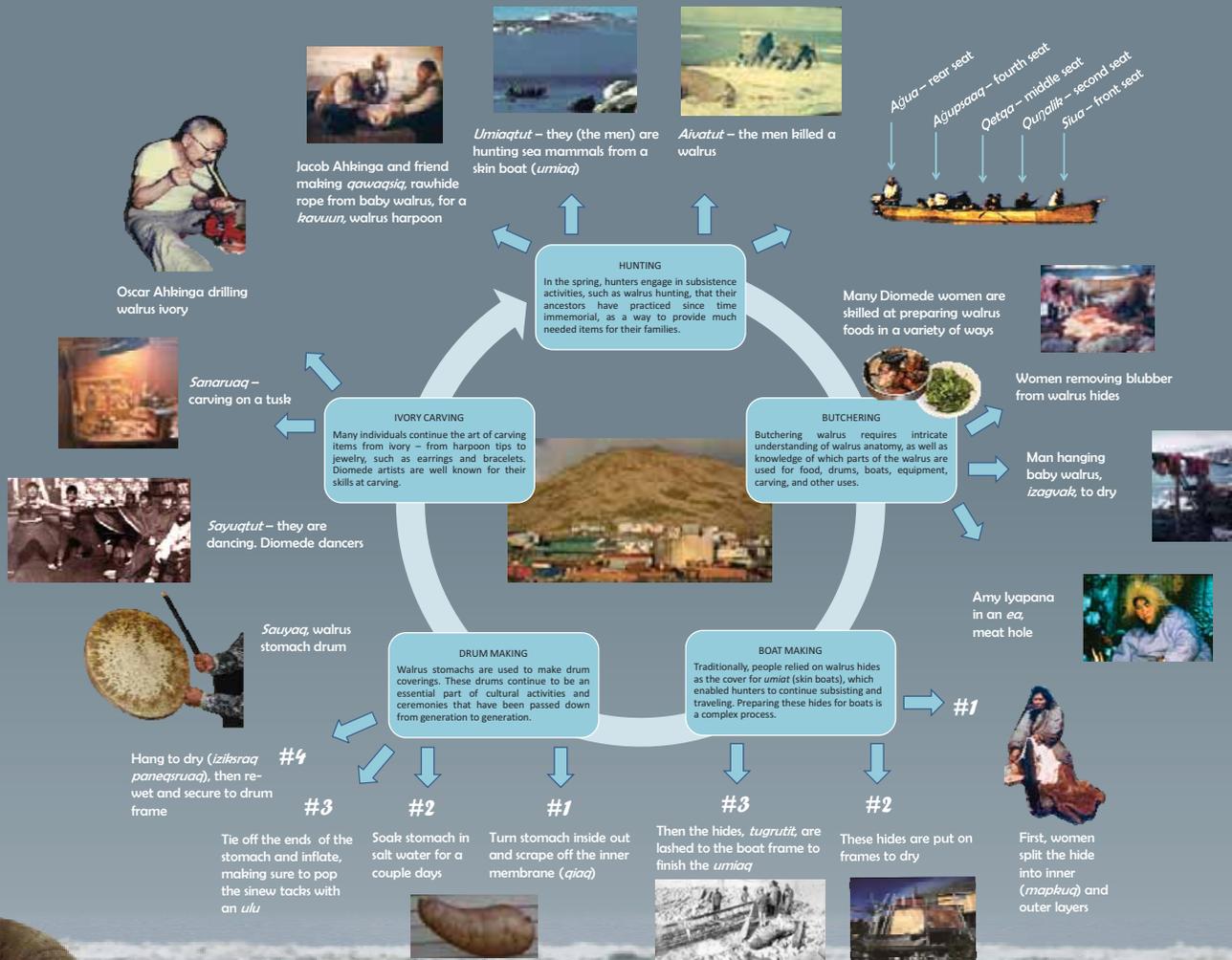
Izagvak blubber (blubber: uqsruq)

- Be sure you have sharp ulus when removing the blubber from a baby walrus as there are lots of sinew tacks to cut through.
- Then render and boil the blubber. Sterilize the seal oil and drop in some murre eggs carefully.
- Only add murre eggs that haven't been washed, as the water will contaminate the eggs. The eggs will help preserve the meat, as well as add flavor to it when storing in the barrel. You can also fry them up, usually around November. When collecting murre eggs, try to collect around 30 of cleanest ones you can find (e.g. not covered much with bird excrement, dirt). This is a great breakfast/snack type food.

Appendix 3: Poster – “We depend on the sea”: The Importance of Walrus to Little Diomede

We depend on the sea: The Importance of Walrus to Little Diomede

The Igalit, or people of Little Diomede, maintain a long-standing and complex relationship with walrus. Traditionally, every part of the walrus had its own specific use so that no part was wasted. Walrus meat provides nourishment, the stomach can be made into drums, the hide can be used to make boats, and the tusks can be made into harpoon tips and jewelry, just to name a few of the many uses Diomedede people have for walrus. Great cultural value and meaning are attached to walrus, as the community has relied heavily on the harvest of walrus to sustain them for millennia. Although this relationship between Diomedede people and walrus has changed over time, walrus remain a critical resource for people on Little Diomede today.



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Kaverak Social Science Program, P.O. Box 948, Nome, AK 99762. www.kaverak.org/socialsci.html

