

## ARTICLES

### PACIFIC WALRUS PROTECTION AND MANAGEMENT IN A CHANGING CLIMATE

ELIZAVETA RISTROPH,

Ristroph Law, Planning, and Research (Fairbanks, USA)

DOI: 10.21684/2412-2343-2017-4-2-6-39

*This article identifies and evaluates strategies and policies for walrus management in both Chukotka and Alaska. As the climate and walrus migration continue to change, it is important to follow adaptable strategies that are not fixed to specific geographic areas. Many of the recommendations may be easier to accomplish in the United States, which offers more opportunities for co-management and stakeholder involvement. The United States government can implement most recommendations without making substantive changes to law. This was significant to most participants – hunters as well as regulators – who supported voluntary approaches over those requiring legal changes.*

*Keywords: International law; climate changing; Alaska; Chukotka.*

**Recommended citation:** Elizaveta Ristroph, *Pacific Walrus Protection and Management in a Changing Climate*, 4(2) BRICS Law Journal 6–39 (2017).

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## Introduction

On both sides of the International Date Line, indigenous communities and scientists are seeing less sea ice and more walrus haulouts on land. While land-based haulouts are not a new phenomenon, the large numbers of walrus haulouts and changes in haulout patterns have sparked interest and concern. There are particular concerns for indigenous marine mammal hunters in Alaska (USA) and Chukotka (Russia), as they face hunting challenges due to reduced sea ice, unpredictable weather, and the northward shift in walrus movement.

### 1. Current and Future Environmental Situation

Since the 1980s, there has been a decline in sea ice in the Bering and Chukchi Seas.<sup>1</sup> Ice floes are now smaller and thinner, supporting fewer walrus haulouts.<sup>2</sup> Less sea ice or sea ice that is not solid complicates marine mammal hunting. If walrus haulouts are on other side of rough, landfast ice from hunters or in open water, hunting is difficult and more dangerous.<sup>3</sup> Hunters may have to hunt at different times (i.e., earlier in the spring, when there is more ice).

With less sea ice available for walrus haulouts, walrus haulouts have been increasing in greater numbers on land at various points along the Alaska and Chukotka coasts.<sup>4</sup> A 2011 haulout near Point Lay had 20,000 to 25,000 walrus haulouts.<sup>5</sup> Numbers are even greater at Cape Serdtse-Kamen in Chukotka, where one haulout may consist of 70,000 to 100,000 walrus haulouts.<sup>6</sup>

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<sup>1</sup> The information in this paragraph was discussed by several participants at the Fairbanks Seminar and also noted in research publications where specifically cited, including *Climate Change 2014: Impacts, Adaptation, and Vulnerability: Summaries, Frequently Asked Questions, and Cross-Chapter Boxes*, A Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (C.B. Field et al. (eds.), Geneva: World Meteorological Organization, 2014), at 32.

<sup>2</sup> Henry P. Huntington et al., *Traditional Knowledge Regarding Walrus, Ringed Seals, and Bearded Seals near Barrow, Alaska*, Final report to the Eskimo Walrus Commission, the Ice Seal Committee, and the Bureau of Ocean Energy Management for contract (2015), at 6 (May 10, 2017), available at [https://www.adfg.alaska.gov/static/research/programs/marinemammals/pdfs/2015\\_traditional\\_knowledge\\_barrow.pdf](https://www.adfg.alaska.gov/static/research/programs/marinemammals/pdfs/2015_traditional_knowledge_barrow.pdf).

<sup>3</sup> *Id.*

<sup>4</sup> Karen L. Oakley et al., *Changing Arctic Ecosystems: Polar Bear and Walrus Response to the Rapid Decline in Arctic Sea Ice*, 2012-3131 USGS Fact Sheet (2012) (May 10, 2017), also available at <http://pubs.usgs.gov/fs/2012/3131/>.

<sup>5</sup> Justin Crawford et al., *Results from Village-Based Walrus Studies in Alaska, 2011*, Alaska Marine Science Symposium, January 16–20, 2012, Anchorage, AK (May 10, 2017), available at [https://www.researchgate.net/publication/290437169\\_Results\\_from\\_village-based\\_walrus\\_studies\\_in\\_Alaska\\_2011](https://www.researchgate.net/publication/290437169_Results_from_village-based_walrus_studies_in_Alaska_2011).

<sup>6</sup> This information was provided by Fairbanks Seminar participant Anatoly Kochnev, Institute of Biological Problems of the North, Far-Eastern Branch of Russian Academy of Sciences, Magadan, Russia; see also Mark S. Udevitz et al., *Potential Population-Level Effects of Increased Haulout-Related Mortality of Pacific Walrus Calves*, 36(2) *Polar Biology* 291 (2013).

Disturbances to land-based walrus haulouts can result in stampedes toward the water, which can crush juvenile and female walruses and lead to spontaneous abortions. Disturbances are associated with air and vessel traffic, polar bears, and interactions with humans (including tourists and media trying to get images). Compared to Alaska, disturbances in Chukotka are much greater. This relates to the greater number of haulouts in Chukotka, many of which are closer to communities.

The recent haulouts are certainly not the first time walruses have been observed hauling out on land. The haulouts at Cape Serdtse-Kamen have been occurring for 60 years.<sup>7</sup> And walruses survived warming periods in prehistorical times, presumably by hauling out on land. Some participants at the Fairbanks Seminar were confident that walruses have adapted before and will adapt again.

Still, there is concern that walruses might not adapt so easily to current stressors, which include not only ice loss but also disturbances that did not exist in prehistoric times (i.e., vessel traffic, low-flying aircraft, commercial fishing, and industrial development).<sup>8</sup> There is also concern about how climate change and ocean acidification are affecting walrus food sources, along with the increased presence of predators such as orcas in the walrus range.<sup>9</sup> Strategies that avoid or minimize these more recent sources of disturbance may help the walrus population in the future.

Beyond providing for the well-being of the walrus population, there is a need to consider how walrus-dependent communities will adapt. Climate change-related impacts to hunting, including reduced sea ice and unpredictable weather, are increasing community stress levels. In some years, communities have not been able to harvest any walrus (i.e., St. Lawrence Island, 2013 and 2015).

Some hunters (those with good Internet access) are adapting by obtaining weather information from the National Oceanic and Atmospheric Administration (NOAA) and the Geographic Information Network of Alaska. This information can also be useful for search and rescue efforts.

In addition to relying more on the Internet for forecasts, Alaska communities are adapting by monitoring what is happening, sharing information, and cooperating and sharing in the harvest. Communities can supplement their diets with caribou and moose to make up for a lack of walrus harvest, though this can put a strain on these species. Hunters are persistent in their efforts to continue their traditional lifeways in spite of the challenges.

Some Chukotkan villages benefit from the current situation, since walrus haulouts have moved closer to these villages. But there are great challenges for villages that

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<sup>7</sup> Kochnev, *supra* note 6.

<sup>8</sup> The information in this paragraph was discussed by several participants at the Fairbanks Seminar and also noted in research publications where specifically cited.

<sup>9</sup> Jeff W. Higdon et al., *Killer Whales (Orcinus Orca) in the Canadian Arctic: Distribution, Prey Items, Group Sizes, and Seasonality*, 28(2) Marine Mammal Science E93 (2012).

are no longer close to haulouts. As in Alaska, people are no longer migratory, and going back and forth between a haulout and home requires time and money. Hunters are traveling longer distances and sometimes coming back empty-handed. And it is difficult to transport harvested walrus over long distances. Unlike in Alaska, where government and non-profit entities have been able to step in and provide food in times of crisis, there is no safety net in Chukotka.

As noted at the Fairbanks Seminar, it is difficult to predict the future and its effects on walrus. There is a need to develop climate models that can be used to forecast how wildlife will respond.<sup>10</sup>

The future could bring less sea ice, more ship and human traffic, more new species in the area, and more industrial activities. Land haulouts are expected to increase.<sup>11</sup> There is concern that if walrus have to keep traveling farther for food, they will deplete more energy than their food can provide. The population could decline, but the extent of decline is uncertain.

Particularly in Chukotka, there are concerns about a loss of language, customs, culture and identity of walrus-dependent communities. This, combined with a deteriorating political and economic situation, raises fears of conditions similar to those after the fall of the Soviet Union.

## 2. Management of Walrus Disturbances in Alaska

### 2.1. Regulatory Framework

#### 2.1.1. Mandatory Measures

##### 2.1.1.1. International

The Polar Code is an international code of safety for ships operating in polar waters. A Polar Code provision that takes effect in 2017 requires ships to consider measures to avoid marine mammals.<sup>12</sup> The International Maritime Organization (IMO), the entity responsible for the Polar Code, does not enforce the Polar Code and related

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<sup>10</sup> Caroline R. Van Hemert et al., *Forecasting Wildlife Response to Rapid Warming in the Alaskan Arctic*, 65(7) *BioScience* 718 (2015).

<sup>11</sup> See Crawford et al., *supra* note 5.

<sup>12</sup> International Code for Ships Operating in Polar Waters (Polar Code), Resolution MSC.385(94), adopted on November 21, 2014 by the International Maritime Organization's Maritime Safety Committee (MSC), and Marine Environment Protection Committee (MEPC), Part 1-A (Safety Measures), 11.3 Requirements ("...[T]he master shall consider a route through polar waters, taking into account the following... .6 current information and measures to be taken when marine mammals are encountered relating to known areas with densities of marine mammals, including seasonal migration areas; .7 current information on relevant ships' routing systems, speed recommendations and vessel traffic services relating to known areas with densities of marine mammals, including seasonal migration areas..."). Additional (voluntary) guidance appears in Part 1-B (12) ("In developing and executing a voyage plan ships should consider the following: .1 in the event that marine mammals are encountered, any existing best practices should be considered to minimize unnecessary disturbance...").

treaties – enforcement is up to the State to which a ship is registered (the flag state). In the United States, enforcement would likely fall to the Coast Guard (USCG).<sup>13</sup>

#### 2.1.1.2. Federal Aviation Administration (FAA)

Requirements for aircraft to maintain minimum altitudes above walrus haulouts could reduce the risk of disturbance. FAA, the federal agency responsible for regulating aircraft, has not set any mandatory altitude restrictions for walrus or other marine mammals in Alaska.

#### 2.1.1.3. U.S. Fish and Wildlife Service (USFWS)

USFWS has jurisdiction over walrus under the Marine Mammal Protection Act (MMPA)<sup>14</sup> but no regulations specific to walrus haulouts. MMPA generally prohibits “take,” which includes “harassment.”<sup>15</sup> Level A harassment is generally that which causes an injury (a fairly clear standard), while Level B is more vague (that which disrupts behavior).<sup>16</sup> USFWS usually seeks to prohibit behavior disruption at a larger level (i.e., harassment that would affect a population) rather than at an individual level.

Developers whose activities may disturb walrus can apply to USFWS for Incidental Harassment Authorization.<sup>17</sup> This usually results in a “letter of authorization” to conduct the activity, with some stipulations to protect marine mammals. Incidental take authorization for oil and gas activity in the Chukchi Sea for 2013–2018 was issued in the form of regulations, which required aircraft to maintain a minimum altitude of 1,000 feet when within 0.5 miles of walrus haulouts, except in case of emergencies or bad weather.<sup>18</sup>

Outside of MMPA, an agency could have jurisdiction over walrus on land that it manages. USFWS has jurisdiction over National Wildlife Refuges under the National Wildlife Refuge Administration Act.<sup>19</sup> A USFWS regulation provides for a general restriction on flying at altitudes that harass wildlife in Refuges.<sup>20</sup>

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<sup>13</sup> Violations of safety laws (including the Polar Code) are a basis for strict liability under the United States Jones Act, 6 USC § 30104. Thus, it is possible that if a ship were to hit a walrus and result in a U.S. lawsuit due to injuries, the ship operator would be liable for not avoiding the collision. *Kernan v. American Dredging Co.*, 355 U.S. 426 (1958).

<sup>14</sup> 16 U.S.C. § 1362(12); 16 U.S.C. § 1375a.

<sup>15</sup> 16 U.S.C. § 1371(a) prohibits “take,” 16 U.S.C. § 1362(13) defines “take” to include “harassment.”

<sup>16</sup> 16 U.S.C. § 1362(18).

<sup>17</sup> 16 U.S.C. § 1371 (a)(5)(D).

<sup>18</sup> 50 C.F.R. § 18.27 (authorizes regulations for up to 5 years); 50 C.F.R. § 18.118 (regulations specific to Chukchi Sea).

<sup>19</sup> 16 U.S.C. § 668dd.

<sup>20</sup> 50 C.F.R. § 27.34.

#### 2.1.1.4. Cooperative Agreements with Eskimo Walrus Commission and Qayassiq Walrus Commission

The Eskimo Walrus Commission (EWC), which represents 19 Northwest Alaska villages, has had a cooperative agreement since 1997 with USFWS under MMPA<sup>21</sup> for walrus conservation and management.<sup>22</sup> Joint efforts focus on monitoring the subsistence harvest and collecting information on harvested animals. Thus far, there has not been a formal project to avoid haulout disturbances.

The Qayassiq Walrus Commission (QWC), consisting of nine villages, oversees walrus harvest activities for the Bristol Bay area. It determines walrus harvest allocation for each village and monitors harvest activities. Through a 1995 cooperative agreement with USFWS, ADF&G, and EWC, QWC regulates walrus subsistence hunting on Round Island.<sup>23</sup>

#### 2.1.1.5. National Oceanic and Atmospheric Administration (NOAA)

The National Marine Fisheries Service (NMFS), a division of NOAA, has no direct jurisdiction over walruses. It does have jurisdiction over vessels conducting fishing and other activities in U.S. marine waters. One example of how it has exercised this jurisdiction is the prohibition on deploying gear 3–12 nautical miles from Round Island and The Twins (part of the State Walrus Islands Game Sanctuary) from April 1 to September 30 for vessels with federal fisheries permits.<sup>24</sup>

#### 2.1.1.6. Bureau of Ocean Energy Management (BOEM)

The National Environmental Policy Act (NEPA) requires federal agencies to evaluate the likely environmental impacts of projects they are proposing or considering approving. If a project is a “major action” with significant impacts on the human environment, an environmental impact statement is required unless there is an

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<sup>21</sup> Marine Mammal Protection Act, Pub. L. No. 103-238, § 119, 16 U.S.C. § 1388.

<sup>22</sup> See Eskimo Walrus Commission (May 10, 2017), available at <http://www.kawerak.org/ewc.html>. In 1987, prior to the 1994 amendment to the Marine Mammal Protection Act authorizing co-management agreements, EWC entered into a Memorandum of Agreement with USFWS and ADF&G. In 1998, a Memorandum of Understanding between EWC, ADF&G, and USFWS was signed, further allowing joint management of the Pacific Walrus Conservation Fund where the majority of the funds come from the sale of raw ivory by EWC during state conferences and events. *Id.* In 2004, EWC and USFWS issued guidelines to prevent waste. Eskimo Walrus Commission and U.S. Fish and Wildlife Service, *Walrus Harvest Guidelines (2004)* (cooperatively developed guidelines to address waste), cited in Martin Robards & Julie L. Joly, *Interpretation of “Wasteful Manner” Within the Marine Mammal Protection Act and Its Role in Management of the Pacific Walrus*, 13 *Ocean and Coastal Law Journal* 171, 189 (2008).

<sup>23</sup> Bristol Bay Native Association Marine Mammals Program, *Overview of the Qayassiq Walrus Commission* (May 10, 2017), available at <http://www.bbna.com/wp-content/uploads/Qayassiq-Walrus-Commission-Overview.pdf>; ADF&G, *Pacific Walrus* (May 10, 2017), available at <http://www.adfg.alaska.gov/index.cfm?ADFG=walrus.management>.

<sup>24</sup> 50 C.F.R. § 679.22(a)(4).

applicable exception.<sup>25</sup> Agencies are required to “[i]nclude appropriate mitigation measures not already included in the proposed action or alternatives.”<sup>26</sup> An agency may avoid an environmental impact statement by issuing a Finding of No Significant Impacts subject to certain enforceable mitigation actions.<sup>27</sup>

BOEM has used the NEPA process to include mitigation measures aimed at reducing impacts to marine mammals in its Environmental Assessment, Finding of No Significant Impact and Letter of Approval for Shell’s 2015 Chukchi Sea Exploration Plan.<sup>28</sup> The Environmental Assessment recommended a vessel buffer from walrus of 0.5 miles, minimum altitudes of 1,500 feet for planes within 1000 feet and 3000 feet for helicopters within one mile from walrus land haulouts, monitoring measures, and reporting requirements.<sup>29</sup> It supported an adaptive management approach to ice management recommended by Shell, through which Shell would call USFWS when in proximity of walrus to discuss whether ice management activities should go forward.<sup>30</sup> These measures were incorporated into the Letter of Approval.<sup>31</sup>

#### 2.1.1.7. Bureau of Land Management (BLM)

BLM has jurisdiction over National Petroleum Reserve-Alaska (NPRa) and other parcels of land in Alaska. Like BOEM, it used the NEPA process associated with its 2012 Integrated Activity Plan for NPRa to develop mitigation measures for walrus along the NPRa coast: a minimum altitude of 2000 feet for planes within 0.5 miles and 3000 feet for helicopters within 1 mile of walrus haulouts.<sup>32</sup>

#### 2.1.1.8. Alaska Department of Fish and Game (ADF&G)

ADF&G has jurisdiction over the Walrus Islands State Game Sanctuary in Bristol Bay. These islands include Round Island, where walrus occasionally haul out. ADF&G

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<sup>25</sup> 42 U.S.C. § 4332(C).

<sup>26</sup> 40 C.F.R. § 1502.14(f).

<sup>27</sup> Memorandum for Heads of Federal Departments and Agencies re: “Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact,” dated January 14, 2011 (“Final Guidance”) (May 10, 2017), available at [https://energy.gov/sites/prod/files/NEPA-CEQ\\_Mitigation\\_and\\_Monitoring\\_Guidance\\_14Jan2011.pdf](https://energy.gov/sites/prod/files/NEPA-CEQ_Mitigation_and_Monitoring_Guidance_14Jan2011.pdf).

<sup>28</sup> Personal Communication with Jill-Marie Seymour, BOEM, March 29, 2016.

<sup>29</sup> Environmental Assessment for Shell Gulf of Mexico, Inc. Revised Outer Continental Shelf Lease Exploration Plan Chukchi Sea, Alaska (March 2015), C-4–C-7, (May 10, 2017), available at <http://www.boem.gov/shell-chukchi/>.

<sup>30</sup> *Id.*

<sup>31</sup> Letter of Approval to Shell from BOEM, May 11, 2015 (May 10, 2017), available at [http://www.boem.gov/uploadedFiles/BOEM/About\\_BOEM/BOEM\\_Regions/Alaska\\_Region/Leasing\\_and\\_Plans/Plans/2015-05-11-Shell-EP-Conditional-Approval.pdf](http://www.boem.gov/uploadedFiles/BOEM/About_BOEM/BOEM_Regions/Alaska_Region/Leasing_and_Plans/Plans/2015-05-11-Shell-EP-Conditional-Approval.pdf).

<sup>32</sup> BLM, NPRa IAP Record of Decision, Stipulation F-1(h) (February 2013).

regulates visits to Round Island through permits,<sup>33</sup> which typically allow access only between May 1 and August 15. Permits provide for contact procedures between visitors and staff, points of access, and vessel specifications and modes of operation. Aircraft access to Round Island is prohibited, unless specifically permitted by ADF&G staff. Beaches are closed to access. Walrus viewing requirements are designed to avoid noise, quick movements, and visual disturbances such as bright clothes.<sup>34</sup>

### 2.1.2. Voluntary Measures

Voluntary guidelines or agreements, while unenforceable, may be implemented more quickly with less political capital.<sup>35</sup>

#### 2.1.2.1. FAA

FAA has issued guidelines<sup>36</sup> that include a 2000-foot minimum altitude for fixed-wing aircraft in “noise sensitive areas” such as National Wildlife Refuges and Parks, where noise interferes with normal activities associated with the area’s use. It has cooperated with other agencies by posting their guidelines on its website. Also, FAA works with USFWS to include language on visual flight rules charts regarding aviation activity in the vicinity of walrus haulouts, as shown in Figure 1.

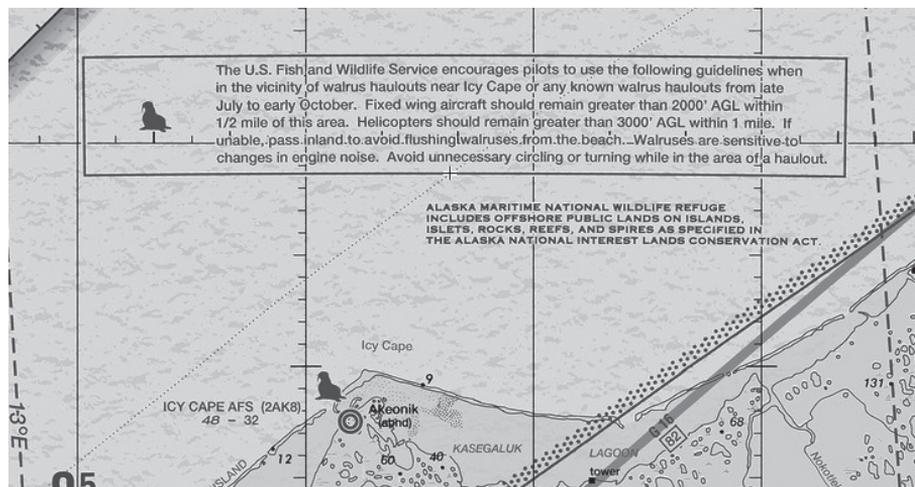


Fig. 1: FAA, Visual Flight Chart with guidance on walrus avoidance

<sup>33</sup> Permits are required under 5 AAC 92.066.

<sup>34</sup> Sample permit provisions from Personal Communication with Ed Weiss, ADF&G, March 16, 2016.

<sup>35</sup> Elizabeth B. Ristroph, *Loosening Lips to Avoid Sinking Ships: Designing a Ship Communications System for the Bering Strait Region*, 24(3) *Indiana International & Comparative Law Review* 581, 590 (2014).

<sup>36</sup> FAA Visual Flight Rules Near Noise-Sensitive Areas, Advisory Circular 91-36D, September 17, 2004.

Further, FAA has cooperated with other federal agencies to publish Flight Advisories requesting that pilots maintain certain minimum altitudes at known haulout sites. For example, in 2008, FAA, USFWS, and NOAA issued an advisory 2000-foot altitude for fixed-wing aircraft (5000-foot for helicopters) within one nautical mile seaward or one-half mile landward of Cape Seniavin and Togiak National Wildlife Refuge (which includes Cape Newenham and Cape Peirce). Marine vessels were requested to remain at least  $\frac{1}{2}$  mile from shore when transiting past Cape Newenham and Cape Peirce. The same advisory set a 1000-foot altitude within one nautical mile seaward or one-half mile landward of the Pribilof Islands.

#### 2.1.2.2. USFWS

USFWS has cooperated with EWC and the North Slope Borough (a municipal government with jurisdiction over a large portion of Arctic Alaska) on outreach efforts to raise awareness about disturbances and consequences. It has communicated informally with government entities, pilots, and communities to share information about haulouts as they develop so protection measures can be implemented. For example, in 2015, it coordinated with Point Lay, USGS, and NOAA to issue an advisory about haulouts and the need to avoid disturbance.<sup>37</sup>

Also in 2015, USFWS issued formal guidance to pilots<sup>38</sup> suggesting a minimum altitude of 2000 feet for planes within 0.5 mile and 3000 feet for helicopters within 1 mile of walrus haulouts.

USFWS has voluntary guidance for vessels operating in Bristol Bay, providing buffers that are larger for larger vessels (0.5 nautical miles from walrus haulouts for vessels up to 50 feet in length, 1.0 nautical mile for vessels 50 to 100 feet, and three 3.0 nautical miles for larger vessels). Vessels should not anchor or fish within 3 nautical miles of hauled out walrus.<sup>39</sup>

#### 2.1.2.3. U.S. Coast Guard (USCG)

The 17<sup>th</sup> District of USCG (the Alaska region) issues a weekly bulletin called “Local Notice to Mariners” containing navigational information such as obstacles and port closures.<sup>40</sup> In the past, a few of these notices have advised vessels to minimize

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<sup>37</sup> USFWS, Point Lay, USGS, and NOAA, If Walruses Haul-Out, Eliminating Disturbance is Essential, August 18, 2015 (May 10, 2017), available at <http://www.fws.gov/alaska/fisheries/mmm/walrus/pdf/NR%2008-18-15%20Point%20Lay%20Requests%20Space%20for%20Walrus.pdf>.

<sup>38</sup> USFWS, Help Minimize the Disturbance of Walrus along the Chukchi Sea Coast (May 10, 2017), available at [http://www.fws.gov/alaska/fisheries/mmm/walrus/pdf/SKMBT\\_C28015082811210.pdf](http://www.fws.gov/alaska/fisheries/mmm/walrus/pdf/SKMBT_C28015082811210.pdf).

<sup>39</sup> USFWS, Guidelines for Marine Vessel Operations Near Pacific Walrus Haulouts in Bristol Bay (September 2012) (May 10, 2017), available at <http://www.fws.gov/alaska/fisheries/mmm/walrus/pdf/vessel%20operations%20in%20bristol%20bay%20factsheet.pdf>.

<sup>40</sup> USCG, Local Notice Mariners, Seventeenth District (May 10, 2017), available at <http://www.navcen.uscg.gov/?pageName=InmDistrict&region=17>.

disturbances to walrus at Cape Seniavin by staying 1000 yards from shore.<sup>41</sup> Much of the information in these bulletins is provided by NOAA's Office of Coast Survey, although USFWS has provided notice about walrus.<sup>42</sup>

## **2.2. Practical Steps to Avoid Disturbance**

The Alaska Native Village of Point Lay has worked to educate youth, give community warnings of haulouts, and restrict tourist access to haulouts. Point Lay has provided photos to the media to reduce the need for journalists to take additional photographs. Starting in 2010, the community adjusted local boating routes and behavior to avoid disturbances; requested planes to stay at least 1500 feet from the haulout; required planes to land and take off from the far end of the runway; and regulated visitors and media.<sup>43</sup> This has helped reduce stampede-related walrus deaths.

In 2015, Point Lay and USFWS got a grant from the National Fish and Wildlife Federation to work with USFWS on haulout management and monitoring efforts and carcass surveys. USFWS worked with Point Lay on a public outreach and education campaign and a media strategy.<sup>44</sup>

It has not been feasible for Point Lay to control ships that come too close to haulouts. There was a question at the Fairbanks Seminar as to whether this was something a Village Public Safety Officer (VPSO) could do. VPSOs are first responders in rural villages, trained by the Alaska Department of Public Safety and employed by Alaska Native non-profits.<sup>45</sup> They have some authority to enforce Alaska and U.S. laws,<sup>46</sup> although they are often stretched thin and a number of communities lack VPSOs. Incorporated boroughs like the North Slope Borough (where Point Lay is located) do have their own police departments.

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<sup>41</sup> USCG, Local Notice Mariners, Seventeenth District, Weekly Bulletin 34/05 (August 2005) (May 10, 2017), available at [http://ntm.c-map.it/upload\\_files/CG172005034/bk0Inm1734.pdf](http://ntm.c-map.it/upload_files/CG172005034/bk0Inm1734.pdf); Weekly Bulletin 48/06 (November 2006) (May 10, 2017), available at [http://www.mxak.org/home/news/news\\_docs/4806.pdf](http://www.mxak.org/home/news/news_docs/4806.pdf); Weekly Bulletin 42/08 (October 2008) (May 10, 2017), available at [http://ntm.c-map.it/upload\\_files/CG172008042/bk0Inm17422008.pdf](http://ntm.c-map.it/upload_files/CG172008042/bk0Inm17422008.pdf).

<sup>42</sup> NOAA, Differences Between NM and LNM (May 10, 2017), available at [http://www.nauticalcharts.noaa.gov/mcld/learn\\_diffNM\\_LNM.html](http://www.nauticalcharts.noaa.gov/mcld/learn_diffNM_LNM.html).

<sup>43</sup> Henry P. Huntington et al., *Traditional Knowledge Regarding Walrus near Point Lay and Wainwright, Alaska*, Final report to the Eskimo Walrus Commission and the Bureau of Ocean Energy Management for contract (2012), at 5 (May 10, 2017), available at [https://www.adfg.alaska.gov/static/research/programs/marinemammals/pdfs/2012\\_traditional\\_knowledge\\_pt\\_lay\\_and\\_wainwright.pdf](https://www.adfg.alaska.gov/static/research/programs/marinemammals/pdfs/2012_traditional_knowledge_pt_lay_and_wainwright.pdf).

<sup>44</sup> National Fish and Wildlife Federation, 2015 Alaska Fish and Wildlife Fund Grants (May 10, 2017), available at <http://www.nfwf.org/afwf/Documents/2015%20AFWF%20Funded%20Projects.pdf>.

<sup>45</sup> A.S. 18.65.670; Division of Alaska State Troopers, Village Public Safety Officer Program, Frequently Asked Questions (May 10, 2017), available at <http://www.dps.state.ak.us/ast/vps/faq.aspx>.

<sup>46</sup> Division of Alaska State Troopers, Village Public Safety Officer Program, Frequently Asked Questions (May 10, 2017), available at <http://www.dps.state.ak.us/ast/vps/faq.aspx>; AS 12.25.010.

Communities on St. Lawrence Island, Alaska, have been noting the names of vessels that come close to haulouts, but have a hard time communicating with these ships. At a 2012 workshop on walrus, St. Lawrence Island participants described other protective measures undertaken by hunters and communities. These include keeping haulout areas clean, notifying USFWS of plane disturbances, and reviving a local hunting ordinance limiting the number of walrus taken per trip, and forming community marine mammal councils.<sup>47</sup>

### **2.3. Coordination and Information Sharing**

As a basis for voluntary or mandatory measures, there is a need for accurate information to be shared among regulatory agencies and between communities and agencies. Alaska Native participants at the Fairbanks Seminar and at the Walrus Research Workshop preceding this seminar expressed a desire for better communication with communities to avoid disturbances and noise. Throughout both events, participants talked about the need to coordinate agency and researcher information at one publicly available website. The Pacific Walrus International Database maintained by USGS could serve such a role, but it is incomplete and does not contain all of the data in the public domain held by agencies. Likewise, there is a need for more information from the Russia side, including translations between Russian and English of article abstracts and project descriptions.

While a coordinating website can play an important role, not all community members may have access to Internet or be comfortable using it. It may make sense to have occasional printed newsletters or community meetings (or at least teleconferences). It also helps to have face-to-face meetings when there is funding to do so. An example is the 2012 workshop ADF&G held in Barrow to talk about how communities are managing haulouts.<sup>48</sup>

## **3. Management of Walrus Disturbances in Russia**

### **3.1. Regulatory Framework**

Russian law generally prohibits hunting and habitat destruction of endangered animals,<sup>49</sup> though the population of walrus inhabiting the Chukchi and Bering Seas are not listed as endangered in Russia.

<sup>47</sup> Perry Pungowiyi, *Avoiding Haul-Out Disturbance on St. Lawrence Island in A Workshop on Assessing Pacific Walrus Population Attributes from Coastal Haulouts*, National Park Service Headquarters Anchorage, Alaska, March 19–22, 2012 (February 2013), at 83 (May 10, 2017), available at [http://www.pacificenvironment.org/wp-content/uploads/2017/02/walrus-mgmt-report\\_final\\_gl.pdf](http://www.pacificenvironment.org/wp-content/uploads/2017/02/walrus-mgmt-report_final_gl.pdf).

<sup>48</sup> Justin Crawford et al., *Results from Village-Based Walrus Studies in Alaska, 2012*, Alaska Marine Science Symposium, January 21–25, 2013, Anchorage, AK (May 10, 2017), available at [https://www.researchgate.net/publication/290437175\\_Results\\_from\\_village-based\\_walrus\\_studies\\_in\\_Alaska\\_2012](https://www.researchgate.net/publication/290437175_Results_from_village-based_walrus_studies_in_Alaska_2012).

<sup>49</sup> Федеральный закон от 24 апреля 1995 г. № 52-ФЗ “О животном мире”, Собрание законодательства РФ, 1995, № 17, ст. 1462 [Federal law No. 52-FZ of April 24, 1995. On Fauna, Legislation Bulletin of the Russian Federation, 1995, No. 17, Art. 1462], Arts. 24, 48; Приказ Минрыбхоза СССР от 30 июня

Russian law provides for traditional subsistence hunting by indigenous peoples and residents in predominately indigenous communities.<sup>50</sup> Quotas for harvest are set by federal agencies.<sup>51</sup>

Hunting within 500 meters of a haulout is generally prohibited,<sup>52</sup> with an exception for Far North peoples.<sup>53</sup> Unless permission is received by the Ministry of Fisheries, the Law on Marine Mammal Protection and Harvests provides for a 12-nautical-mile buffer for vessels around haulouts and a 4000-meter minimum altitude for aircraft. A different article of the same law applies these limits to specific geographic points.<sup>54</sup> Chukotkan participants at the Fairbanks Seminar said that advocates have had no success in trying to change the law to avoid these geographic limitations, which will become less useful as walrus haulouts shift.

Russian laws do not officially provide for co-management with indigenous groups (as in the United States), although there are some provisions for local governance.<sup>55</sup>

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1986 г. № 349 “Об утверждении Правил охраны и промысла морских млекопитающих” [Order of the Ministry of Fisheries of the USSR No. 349 of June 30, 1986. On Approval of Rules of Marine Mammal Protection and Harvest], Art. 11.1 (May 10, 2017), available at <http://www.consultant.ru/cons/cgi/online.cgi?req=doc&base=ESU&n=7556&dst=100010#0>.

<sup>50</sup> Федеральный закон от 24 июля 2009 г. № 209-ФЗ “Об охоте и о сохранении охотничьих ресурсов и о внесении изменений в отдельные законодательные акты Российской Федерации”, Собрание законодательства РФ, 2009, № 30, ст. 3735 [Federal law No. 209-FZ of July 24, 2009. On Hunting and the Protection of Hunting Resources and Amending Some Legislative Acts of the Russian Federation, Legislation Bulletin of the Russian Federation, 2009, No. 30, Art. 3735], Art. 19; Федеральный закон от 7 мая 2001 г. № 49-ФЗ “О территориях традиционного природопользования коренных малочисленных народов Севера, Сибири и Дальнего Востока Российской Федерации”, Собрание законодательства РФ, 2001, № 20, ст. 1972 [Federal law No. 49-FZ of May 7, 2001. On Territories for Traditional Natural Resource Use by Indigenous Peoples of the North, Siberia and the Russian Far East, Legislation Bulletin of the Russian Federation, 2001, No. 20, Art. 1972], Art. 2 (indigenous peoples and those residing in indigenous communities have the right to practice their traditional customs to the extent they don’t conflict with Russian law).

<sup>51</sup> Federal law No. 209-FZ on Hunting and the Protection of Hunting Resources, *supra* note 50, Art. 24.

<sup>52</sup> Order of the Ministry of Fisheries of the USSR No. 349 on Approval of Rules of Marine Mammal Protection and Harvest, *supra* note 49, Art. 11.1; Приказ Минрыбхоза СССР от 11 июля 1975 г. № 300 “Об утверждении Правил охраны и промысла морских млекопитающих” [Order of the Ministry of Fisheries of the USSR No. 300 of July 11, 1975. On Approval of Rules of Marine Mammal Protection and Harvest], Art. 9 in Сборник нормативных актов по охране природы [The Collection of Regulations on Conservation] (V.M. Blinov (ed.), Moscow: Yuridicheskaya literatura, 1978).

<sup>53</sup> Order of the Ministry of Fisheries of the USSR No. 300 on Approval of Rules of Marine Mammal Protection and Harvest, *supra* note 52, Art. 10.

<sup>54</sup> Order of the Ministry of Fisheries of the USSR No. 349 on Approval of Rules of Marine Mammal Protection and Harvest Law, *supra* note 49, Art 11.4; Order of the Ministry of Fisheries of the USSR No. 300 on Approval of Rules of Marine Mammal Protection and Harvest, *supra* note 52, Art. 9.

<sup>55</sup> Федеральный закон от 6 октября 2003 г. № 131-ФЗ “Об общих принципах организации местного самоуправления в Российской Федерации”, Собрание законодательства РФ, 2003, № 40, ст. 3822 [Federal law No. 131-FZ of October 6, 2003. On General Principles of Local Self-Government in the Russian Federation, Legislation Bulletin of the Russian Federation, 2003, No. 40, Art. 3822], Art. 35.

While indigenous peoples are guaranteed certain rights under Russian law,<sup>56</sup> these rights are often not achievable in practice.<sup>57</sup>

Enforcement of laws designed to protect marine mammals is weak due to financial constraints and the lack of enforcement personnel. Community organizations end up doing much of the monitoring and enforcement themselves, to the extent they are able to do so. Developing management capacity may be more important than ensuring the enactment of strong laws. At the same time, there is a perception that the law is enforced more strictly against indigenous hunters than against others.<sup>58</sup>

Chukotkan participants at the Fairbanks Seminar described a disconnection between those who make laws and the communities in Chukotka who bear the brunt of enforcement and walrus protection. Chukotkan participants suggested that affected communities should have more of a voice in these decisions. This sentiment was echoed by Alaskan participants.

### **3.2. Practical Steps to Avoid Disturbance**

Indigenous Chukotkan hunters formed the Union of Marine Mammal Hunters as a coalition of commissions representing 15 villages of indigenous Chukotkans in marine mammal management. These functions were absorbed by the Traditional Marine Mammal Hunters of Chukotka (ATMMHC) in 2001.

ATMMHC began monitoring haulouts after large walrus mortalities were observed in the fall of 2007. In 2009, indigenous groups began working with scientists (through the Haulout Keepers project) to monitor eight haulouts. Hunters obtained significant amounts of information that enabled them to play important roles in tracking haulouts over time and providing information to villages and agencies. They made recommendations on shipping, aviation, and community and government actions.<sup>59</sup>

<sup>56</sup> *E.g.*, Федеральный закон от 30 апреля 1999 г. № 82-ФЗ “О гарантиях прав коренных малочисленных народов Российской Федерации”, Собрание законодательства РФ, 1999, № 18, ст. 2208 [Federal law No. 82-FZ of April 30, 1999. On Guarantees of the Rights of Indigenous Peoples, Legislation Bulletin of the Russian Federation, 1999, No. 18, Art. 2208]; Federal law No. 49-FZ on Territories for Traditional Natural Resource Use by Indigenous Peoples of the North, Siberia and the Russian Far East, *supra* note 50; Федеральный закон от 20 июля 2000 г. № 104-ФЗ “Об общих принципах организации общин коренных малочисленных народов Севера, Сибири и Дальнего Востока Российской Федерации”, Собрание законодательства РФ, 2000, № 30, ст. 3122 [Federal law No. 104-FZ of July 20, 2000. On General Principles of Organization of Indigenous Communities with Small Populations, Legislation Bulletin of the Russian Federation, 2000, No. 30, Art. 3122].

<sup>57</sup> World Bank Safeguard Policies Review and Update, Dialogue with Indigenous Peoples, October 2013 – March 2014, at 9 (May 10, 2017), available at [https://consultations.worldbank.org/Data/hub/files/consultation-template/review-and-update-world-bank-safeguard-policies/en/materials/final\\_summary\\_dialogue\\_with\\_ip\\_october\\_2013-march\\_2014.pdf](https://consultations.worldbank.org/Data/hub/files/consultation-template/review-and-update-world-bank-safeguard-policies/en/materials/final_summary_dialogue_with_ip_october_2013-march_2014.pdf); Federica Prina, *Protecting the Rights of Minorities and Indigenous Peoples in the Russian Federation: Challenges and Ways Forward*, Minority Rights Group Europe (2014), at 15 (May 10, 2017), available at [http://minorityrights.org/wp-content/uploads/2014/11/mrg-protecting-rights-minorities-indigenous-peoples-russian-federation\\_English.pdf](http://minorityrights.org/wp-content/uploads/2014/11/mrg-protecting-rights-minorities-indigenous-peoples-russian-federation_English.pdf).

<sup>58</sup> The information in this paragraph was discussed by several participants at the Fairbanks Seminar.

<sup>59</sup> *Id.*

As mentioned above, much of the burden of walrus management has fallen to disempowered communities. One example given at the Fairbanks Seminar was the Chukotkan village of Vankarem, which is near a major haulout. Local residents had established guidelines to avoid stampedes by keeping the area quiet and calm and prohibiting perfume and bright colors. In 2013, a large cruise ship anchored offshore, and rafts ferried tourists in for a close-up look at the walruses, all with permission from authorities in Moscow. The village was not warned or consulted about the cruise ship arrival, and the cruise ship was unaware of the local protective measures.

More Russian nongovernmental organizations (NGOs) have gotten involved in recent years, but NGO involvement can be cyclical and fluid.<sup>60</sup> Since about 2014, NGOs have been experiencing hard times due to Russia's economic and political situation. Foreign NGOs, to the extent they are allowed and willing to operate in Russia, are important sources of funding for joint research and on-the-ground projects.<sup>61</sup> One bright spot in NGO and community activity has been the increased use of Skype to communicate rather than relying on infrequent in-person meetings.

Indigenous participants at the Fairbanks Seminar spoke about the need to enforce their legal rights and the potential role of an indigenous advisory board. There is an Inuit Circumpolar Council office in Russia and Association of Indigenous Peoples in Chukotka, which is an affiliate of the Russian Association of Indigenous Peoples of the North, Siberia, and the Far East.

## 4. Potential Protective Measures

### 4.1. Protected Areas

Areas where walruses are hauling out, migrating, or feeding could be protected under international or U.S. law, or by Alaska law if within three nautical miles of the coast.

Such designations can restrict disturbances without curtailing hunting, depending on the type and wording of the designation. At the seminar, someone suggested designating a "food security zone" for Beringia. The challenge to any of the designations described in this section is that they are based on specific geographic

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<sup>60</sup> The information in this paragraph was discussed by several participants at the Fairbanks Seminar.

<sup>61</sup> Russia's foreign agent law requires any NGO that receives funding from abroad and engages in political activity to formally register as a "foreign agent." The law authorizes intrusive audits, labeling requirements, and stiff administrative fines. While NGOs that support the protection of flora and wildlife are supposed to be exempt under Art. 2, a number of conservation NGOs have been cited under the law. See Федеральный закон от 20 июля 2012 г. № 121-ФЗ "О внесении изменений в отдельные законодательные акты Российской Федерации в части регулирования деятельности некоммерческих организаций, выполняющих функции иностранного агента", Собрание законодательства РФ, 2012, № 30, ст. 4172 [Federal law No. 121-FZ of July 20, 2012. On Amending Legislative Acts of the Russian Federation on the Regulation of Non-Profit Organizations Performing the Functions of Foreign Agents, Legislation Bulletin of the Russian Federation, 2012, No. 30, Art. 4172].

areas, and haulouts may shift after the designation is in place. This means that a relatively broad designation might be required to be effective, but this may not be politically feasible. Ideally, a designation could be adaptable, tied to regularly updated information on walrus locations.

At the international level, a Particularly Sensitive Sea Area (PSSA) can be designated by IMO with support of member states.<sup>62</sup> This designation provides for specific measures (called “Associated Protective Measures”) to avoid ecological and subsistence harm, which might include a ship routing or reporting system near or in the area or speed limits.<sup>63</sup> These measures would need to be enforced by member states.

Another type of IMO designation is an Area to Be Avoided,<sup>64</sup> “an area within defined limits in which either navigation is particularly hazardous or it is exceptionally important to avoid casualties and which should be avoided by all ships, or by certain classes of ships.”<sup>65</sup> These areas may be adopted to avoid shipping accidents as well as for environmental protection.<sup>66</sup> One example is the 2014 Areas to Be Avoided for the Aleutian Islands region, designed to protect marine mammals and subsistence uses (as well as commercial fishing).<sup>67</sup> Another example is the voluntary seasonal Area to Be Avoided off the northeastern U.S. coast for Right whales, corresponding to the whale’s feeding area.<sup>68</sup>

There have been efforts by U.S.-based groups to promote a ship routing scheme and Areas to Be Avoided in the Bering Sea, with the aim of protecting important subsistence areas and environmentally sensitive areas from ship traffic. One proposal would provide for a six-nautical mile buffer around walrus haulouts along the coast

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<sup>62</sup> IMO, Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas, Assembly Res. A.982 (24), adopted on December 1, 2005, § 1.2 (May 10, 2017), available at [www.imo.org/blast/blastDataHelper.asp?data\\_id=14373&filename=982.pdf](http://www.imo.org/blast/blastDataHelper.asp?data_id=14373&filename=982.pdf).

<sup>63</sup> *Id.* § 6; see also Jon M. Van Dyke & Sherry P. Broder, *Particular Sensitive Sea Areas; Protecting the Marine Environment in the Territorial Seas and Exclusive Economic Zones*, 40 *Denver Journal of International Law and Policy* 472, 478 (2011) (suggesting that measures may include vessel traffic services).

<sup>64</sup> IMO, Ships Routeing (May 10, 2017), available at <http://www.imo.org/ourwork/safety/navigation/pages/shipsrouteing.aspx>.

<sup>65</sup> *Id.*; see also 33 C.F.R. § 167.5(a) (defining Area to Be Avoided as “a routing measure comprising an area within defined limits in which either navigation is particularly hazardous or it is exceptionally important to avoid casualties and which should be avoided by all ships or certain classes of ships”).

<sup>66</sup> IMO, Ships Routeing, *supra* note 64.

<sup>67</sup> United States, Proposal for Establishment of Five Areas to Be Avoided in the Region of the Aleutian Islands, submitted to IMO Sub-Committee on Navigation, Communications, and Search and Rescue, December 5, 2014 (May 10, 2017), available at <http://www.nepia.com/media/258601/IMO-NCSR-2-3-5-Adopt-the-Establishment-of-Five-Areas-to-be-Avoided.pdf>; IMO, Routeing Measures Other than Traffic Separation Schemes, SN.1/Circ. 331, July 13, 2015 (May 10, 2017), available at [http://www.ak-mprn.org/wp-content/uploads/2015/12/IMO-SN.1\\_Circ.331-dated-13-July-2015.pdf](http://www.ak-mprn.org/wp-content/uploads/2015/12/IMO-SN.1_Circ.331-dated-13-July-2015.pdf).

<sup>68</sup> *Id.*

of Diomedes and St. Lawrence.<sup>69</sup> Since this proposal and traffic scheme only concerns the U.S. side of the Bering Strait, it would not address walrus haulouts at Round Island or the Chukchi coastline along Alaska and Chukotka.

Under U.S. law, a marine national monument or a national marine sanctuary could be designated. Monuments are designated by the U.S. President under the Antiquities Act.<sup>70</sup> The Act does not require any specific public process for the designation. The proclamation designating the monument determines what activities are allowed within the monument – there is no bar to subsistence or any other activity unless specifically stated in the proclamation.<sup>71</sup> President George W. Bush used this authority to designate the Papahānaumokuākea Marine National Monument (which is also a PSSA) in the Pacific Ocean.

Sanctuaries can be nominated by communities and designated by NOAA under the National Marine Sanctuaries Act (NMSA) after an extensive public process,<sup>72</sup> or they can be designated by Congress. Sanctuaries can be co-managed by states, tribes, or local groups.<sup>73</sup> Subsistence use and commercial fishing licenses already in existence at the time of designation may continue, but may be subject to regulation by NOAA.<sup>74</sup> This limitation may make sanctuaries less desirable.

Another option under U.S. law would be for USCG to designate Areas to Be Avoided or Precautionary Areas within U.S. waters.<sup>75</sup> The Ports and Waterways Safety Act allows USCG to establish and maintain measures for controlling or supervising vessel traffic as well as for protecting navigation and the marine environment.<sup>76</sup> These measures, which may be implemented in U.S. territorial waters or in areas covered by an international agreement, include ship reporting systems, ship routing systems, vessel traffic services, areas to be avoided, tracking systems, and speed limits.<sup>77</sup>

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<sup>69</sup> Audubon Alaska et al., Comments to Rear Admiral Daniel Abel, USCG, RE: Recommendations on the Port Access Route Study: In the Chukchi Sea, Bering Strait and Bering Sea, Docket ID: USCG-2014-0941, June 3, 2015, at 21.

<sup>70</sup> 16 U.S.C. §§ 431–433.

<sup>71</sup> Elizabeth B. Ristorph & Anwar Hussain, *Wilderness: Good for Alaska, Economic and Legal Perspectives on Alaska's Wilderness*, 4 Washington Journal of Environmental Law & Policy 424, 432 (2015).

<sup>72</sup> 16 U.S.C. § 1434.

<sup>73</sup> 16 U.S.C. § 1442.

<sup>74</sup> 16 U.S.C. § 1434(c); 15 C.F.R. § 922.47(a).

<sup>75</sup> See 33 U.S.C. § 1223 (authority for implementing vessel routing measures); 33 C.F.R. Part 167 (defining Areas to be Avoided and Precautionary Areas; describing where these areas exist in U.S. waters); Audubon Alaska et al., Comments to Rear Admiral Daniel Abel, *supra* note 69, at 21.

<sup>76</sup> 33 U.S.C. § 1223(a).

<sup>77</sup> *Id.*

Finally, the State of Alaska could designate a new protected area in a manner similar to its designation of the Walrus Islands State Game Sanctuary.<sup>78</sup> This would allow the State to restrict access or set vessel buffers (out to three nautical miles). There would not be a change in subsistence regulation unless the State entered a cooperative management agreement with USFWS.

#### **4.2. Altitude Restrictions**

One idea discussed at the Fairbanks Seminar was the potential for a regulation based on MMPA<sup>79</sup> that would identify examples of the term “harassment,” which could include aircraft flying below certain altitudes. A representative from USFWS suggested that the agency did not have sufficient power under MMPA to impose altitude restrictions.

Another idea concerned FAA authority to restrict the use of airspace for a variety of reasons, including the public interest.<sup>80</sup> FAA used this authority to limit flights when President Obama came to Alaska in 2015,<sup>81</sup> and it was basis for Advisory Circular 91-36D. But there seemed to be little interest on the part of Fairbanks Seminar participants in having FAA establish altitude restrictions. An FAA representative characterized the FAA mission as aviation safety rather than wildlife protection. FAA prefers to educate aviators who fly in the vicinity of walrus and has tools to support outreach and education endeavors.

#### **4.3. Endangered Species Act Measures**

In 2008, USFWS was petitioned to list the Pacific walrus as threatened or endangered under the Endangered Species Act<sup>82</sup> and to designate critical habitat. In 2011, USFWS determined that a listing was warranted but precluded by higher priority species.<sup>83</sup> USFWS has not made a determination under MMPA<sup>84</sup> as to whether the Pacific Walrus

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<sup>78</sup> State of Alaska refuges, critical habitat areas, and sanctuaries provide different levels of protection, with sanctuaries like the Walrus Islands State Game Sanctuary generally providing the greatest protection. ADF&G, Refuges, Sanctuaries, Critical Habitat Areas & Wildlife Ranges. These protected areas are generally created through the legislature based on community requests and input. See AS 16.20.010 (state’s authority); AS 16.20.092 (establishing Walrus Islands State Game Sanctuary).

<sup>79</sup> 16 U.S.C. §§ 1362(13, 18), 1371(a).

<sup>80</sup> See 49 U.S.C. § 40103(b)(1) (“The Administrator of the Federal Aviation Administration shall develop plans and policy for the use of the navigable airspace and assign by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace. The Administrator may modify or revoke an assignment when required in the public interest.”). It could be argued that avoiding walrus disturbance is in the public interest.

<sup>81</sup> FAA, Flight Advisory VIP Visit Alaska, August 31 – September 2 (May 10, 2017), available at [http://www.faa.gov/news/updates/media/VIP\\_Alaska\\_Advisory.pdf](http://www.faa.gov/news/updates/media/VIP_Alaska_Advisory.pdf).

<sup>82</sup> Sec. 4(a)(1) of the ESA and the listing regulations (50 C.F.R. Part 424).

<sup>83</sup> USFWS, Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List the Pacific Walrus as Endangered or Threatened, 76 Fed. Reg. 7634, February 10, 2011.

<sup>84</sup> 16 U.S.C. § 1383b(a).

is depleted.<sup>85</sup> Based on concern about climate change and development, USFWS is now reconsidering a listing, with a final decision scheduled for 2017.<sup>86</sup>

Other ice-dependent pinnipeds have been under similar consideration. The ribbon seal is considered a “species of concern” but not depleted under MMPA or threatened or endangered under the Endangered Species Act (ESA).<sup>87</sup> The bearded seal is not considered depleted, threatened, or endangered overall, but one distinct population (Okhotsk) is considered depleted and threatened.<sup>88</sup> Similarly, the ringed seal is not considered depleted, threatened, or endangered overall, but two subspecies are considered endangered (Ladoga<sup>89</sup> and Saimaa<sup>90</sup>), three threatened (Okhotsk, Arctic, and Baltic<sup>91</sup>), and five depleted (Ladoga, Arctic, Okhotsk, Baltic, and Saimaa).<sup>92</sup>

Many Alaska Native hunters (including participants at the Fairbanks Seminar) are concerned about potential listings under the Endangered Species Act, as this may allow hunting restrictions at some time in the future. While Sec. 10(e) of the Endangered Species Act generally provides an exemption for subsistence, USFWS could, after notice and a hearing, determine that subsistence “materially and negatively affects the threatened or endangered species” and issue regulations restricting subsistence.<sup>93</sup>

With a listing and critical habitat designation, buffers and potentially altitude restrictions could be imposed. An example is critical habitat for the Steller’s sea lion, which includes an air zone and an aquatic zone extending 3,000 feet from each major rookery and major haulout in Alaska.<sup>94</sup> Further, vessel traffic is generally prohibited within three nautical miles of rookeries.<sup>95</sup> But these designations and buffers are

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<sup>85</sup> USFWS, Marine Mammal Protection Act; Stock Assessment Reports, 79 Fed. Reg. 22154, April 21, 2014.

<sup>86</sup> USFWS, Planned Listing Actions, November 13, 2015 (May 10, 2017), available at [http://www.fws.gov/endangered/improving\\_ESA/pdf/20151113\\_Planned\\_Listing\\_Actions.pdf](http://www.fws.gov/endangered/improving_ESA/pdf/20151113_Planned_Listing_Actions.pdf).

<sup>87</sup> NMFS, Endangered and Threatened Wildlife; Determination on Whether To List the Ribbon Seal as a Threatened or Endangered Species, 78 Fed. Reg. 41371, July 10, 2013; NOAA, Ribbon Seal (May 10, 2017), available at <http://www.fisheries.noaa.gov/pr/species/mammals/seals/ribbon-seal.html>.

<sup>88</sup> NOAA, Final Listing of the Okhotsk Sub-Species as Threatened under the Endangered Species Act, 77 Fed. Reg. 76739, December 28, 2012.

<sup>89</sup> NOAA, Endangered and Threatened Species; Threatened Status for the Arctic, Okhotsk, and Baltic Subspecies of the Ringed Seal and Endangered Status for the Ladoga Subspecies of the Ringed Seal, 77 Fed. Reg. 76705, December 28, 2012.

<sup>90</sup> NOAA, Endangered and Threatened Species, Saimaa Seal, 58 Fed. Reg. 26920, May 6, 1993.

<sup>91</sup> NOAA, Endangered and Threatened Species, *supra* note 89.

<sup>92</sup> NOAA, Ringed Seal (May 10, 2017), available at <http://www.nmfs.noaa.gov/pr/species/mammals/seals/ringed-seal.html>.

<sup>93</sup> 16 U.S.C. § 1539(e)(4).

<sup>94</sup> 50 C.F.R. § 226.202.

<sup>95</sup> 50 C.F.R. § 223.202.

based on specific geographic points, and marine mammal haulouts may shift with climate change.

#### **4.4. Speed Limits**

In addition to establishing Areas to Be Avoided (discussed above), USCG could use its authority under the Ports and Waterways Safety Act to establish speed limits along ship routes near potential haulout areas.

Authority for speed limits could also be tied to an ESA listing. For example, in 2008, NOAA/NMFS used its ESA authority to issue a speed limit of 10 knots/per hour in certain areas at particular times of the year when endangered Right whales are expected to be present.<sup>96</sup>

Another example is the limit set by the National Park Service (NPS) for Glacier Bay Park. Since NPS has jurisdiction over the park, it has authority to set vessel buffers and other measures not inconsistent with its regulatory authority.<sup>97</sup>

Voluntary speed limits could also be effective. An example is the 10 knots/hour limit agreed upon by the Alaska Eskimo Whaling Commission and oil industry representatives for vessels “in the proximity of feeding whales or whale aggregations.”<sup>98</sup>

#### **4.5. Tracking of Vessels and Airlines**

If mandatory altitude restrictions, speed limits, or buffers were to be implemented and enforced, it could be a challenge for enforcement agencies to know when violations occurred far from villages. Tracking devices already required under U.S.<sup>99</sup>

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<sup>96</sup> See Final Rule to Implement Speed Restrictions to Reduce the Threat of Ship Collisions with North Atlantic Right Whales, 73 Fed. Reg. 60173, October 10, 2008; 50 C.F.R. § 224.105 (outlining effective times of year and geographic boundaries). The rule applies to all vessels (except those operated by or under contract to Federal agencies) that are 65 feet or greater in overall length in certain locations, and at certain times of the year along the east coast of the U.S. Atlantic seaboard. *Id.*

<sup>97</sup> 54 U.S.C. § 100101 (NPS authority to promulgate rules); 16 U.S.C. § 410hh (authority to administer Alaska parks). See, e.g., 36 C.F.R. § 13.1170 (generally prohibiting vessel operation within  $\frac{1}{4}$  nautical mile of a whale and setting a mandatory 10 knot/hour speed limit) and 13.1176 (speed limit of 20 knots/hour from May 15 through September 30, in designated whale waters).

<sup>98</sup> Open Water Season Programmatic Conflict Avoidance Agreement, March 1, 2012, §§ 302(d), 501(c) (May 10, 2017), available at [http://www.nmfs.noaa.gov/pr/pdfs/permits/bp\\_openwater\\_caa2012.pdf](http://www.nmfs.noaa.gov/pr/pdfs/permits/bp_openwater_caa2012.pdf).

<sup>99</sup> 46 U.S.C. § 70115; 33 C.F.R. § 164.46 (requiring the following vessels to have AIS when on an international voyage: self-propelled vessels of 65 feet or more in length, other than passenger and fishing vessels, in commercial service; passenger vessels of 150 tons or more; all tankers; and vessels (other than passenger vessels or tankers) of 300 tons or more; and requiring the following vessels to have AIS when passing through a VTS: self-propelled vessels of 65 feet or more in length, other than fishing vessels and passenger vessels certificated to carry less than 151 passengers-for-hire, in commercial service; towing vessels of 26 feet or more in length and more than 600 horsepower, in commercial service; and passenger vessels certificated to carry more than 150 passengers-for-hire); 33 C.F.R. § 169.205 (requiring passenger ships, cargo ships of 300 tons or more, and mobile offshore units not engaged in drilling operations to transmit position reports while engaged on an international voyage).

and international<sup>100</sup> law for many vessels could help with this kind of enforcement. Long Range Identification and Tracking (LRIT) systems and Automated Identification Systems (AIS) allow communication between vessels and on-shore observers, with the objective of avoiding collisions, maintaining safe distance from maritime hazards, locating vessels in distress, and assisting in search and rescue efforts. Under both systems, vessels carry hardware which actively transmits information regarding vessel identify and location.<sup>101</sup> At the Fairbanks Seminar, there was not great interest in pursuing mandatory regulations enforced by such tracking devices. But ADF&G is already using AIS at Round Island in addition to other methods to identify vessels and aircraft and pursuing violations or warnings.<sup>102</sup>

#### **4.6. Use of Drones for Monitoring**

The possibility of using drones for research, monitoring, and media purposes was not discussed at the Fairbanks seminar, but it may be a way to reduce disturbances associated with aircraft. In and near Alaska, drones have already been used to survey hauled out Steller's sea lions and ice seals.<sup>103</sup> If additional research suggests that drones cause less disturbance than other forms of monitoring or photographing, perhaps drone usage could be required for permit-authorized research.

#### **4.7. Tribal Regulation**

Alaska Native participants at the Fairbanks Seminar were interested in what Alaska tribes might do on their own to regulate walrus, through measures such as asserting aboriginal title. In spite of limitations imposed by the Alaska Native Claims Settlement Act (ANCSA),<sup>104</sup> Alaska tribes retain jurisdiction over their members, the ability to issue use permits on Native allotments and townsites, the ability to issue persuasive resolutions regarding the activities of non-members, and innovative opportunities to expand jurisdiction as Native law evolves.<sup>105</sup>

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<sup>100</sup> SOLAS, as amended by IMO Res. MSC.202(81), May 19, 2006, Reg. V/19-4.1.1; 19-1.2.1 (requiring cargo vessels of 300 gross tons or more, passenger ships, high speed craft, and mobile offshore drilling rigs to implement LRIT); SOLAS regs. V/19.2.4 & 19.1 (requiring all passenger vessels, all vessels of 300 gross tons and larger on international voyages, and all cargo vessels of 500 gross tons not on international voyages to be fitted with AIS equipment).

<sup>101</sup> Ristroph 2014, at 619.

<sup>102</sup> Weiss Communication, *supra* note 34.

<sup>103</sup> Joel K. Bourne, Jr., *In the Empty Arctic, How to Get the Job Done? With A Drone*, National Geographic, April 14, 2016 (May 10, 2017), available at <http://news.nationalgeographic.com/2016/04/160414-Arctic-drones-wildlife-fire-oil-spill-environment/>.

<sup>104</sup> 43 U.S.C. § 1603.

<sup>105</sup> *Kimball v. Callahan*, 590 F.2d 768, 777-78 (9<sup>th</sup> Cir. 1979) (inherent power to determine membership does not depend on having a territorial base, so even tribes with no Indian country may retain this power); *John v. Baker*, 982 P.2d 738 (Alaska 1999) (holding that ANCSA did not extinguish tribal sovereignty); Act of May 1, 1936, ch. 254, 49 Stat. 1250 (codified at 25 U.S.C. § 473a) (amending the Indian Reorganization Act of 1934 to include Alaska Natives).

*Alaska v. Native Village of Venetie Tribal Government* suggests that Alaska tribes can still exert jurisdiction over land that is held in trust, including Native allotments and townsites<sup>106</sup> considered “restricted property.”<sup>107</sup> A tribe could pass a zoning code regarding activities that can take place on restricted properties, or adopt an existing zoning code from the municipality in which the tribe is located. There will be opportunities to expand land held in trust if litigation in *Akiachak v. Jewell* is resolved in favor of Alaska Native plaintiffs. The case was brought to invalidate a portion of regulations (25 C.F.R. Part 151) prohibiting the Interior Secretary from acquiring title to land in trust on behalf of Alaska tribes. Although the Bureau of Indian Affairs (BIA) has already revised the regulation,<sup>108</sup> it will not approve any applications for land into trust while the appeal is pending.<sup>109</sup>

A tribe could adopt regulations or guidelines to govern the conduct of its own members, and ask non-members to voluntarily adhere to them. For example, in 2008, the Tribal Council of Point Lay adopted its own bylaws to protect and manage the traditional community beluga hunts.<sup>110</sup>

Aboriginal subsistence hunting and fishing rights are part of “aboriginal title,” the possessory rights that tribes retain by virtue of their use and occupancy for centuries or even millennia.<sup>111</sup> There have been several court cases on the issue of whether an Alaska tribe can claim aboriginal title to parts of the ocean that have traditionally been used for hunting and fishing. In *Inupiat Community of the Arctic Slope v. United States*,<sup>112</sup> the Ninth Circuit extended the effect of ANCSA to the use of sea ice many

<sup>106</sup> These are allotments established under the Alaska Native Allotment Act, Act of May 17, 1906, 43 U.S.C. §§ 270-1 to 270-3, repealed with savings clause, 43 U.S.C. § 1617(a) and townsites established under the Alaska Native Townsite Act, 43 U.S.C. §§ 733, 735, repealed under Federal Land Policy Management Act, sec. 701, with savings clause. See *Aleknagik Natives Ltd. v. U.S.*, 886 F.2d 237 (9<sup>th</sup> Cir. 1989).

<sup>107</sup> See 25 C.F.R. 1.4(a) (prohibiting state or local regulation of “zoning or otherwise governing, regulating, or controlling the use of any real or personal property... that is held in trust or is subject to a restriction against alienation imposed by the United States”); 25 C.F.R. § 1.4(b) (giving the Interior Secretary authority to agree on zoning regulations, in consultation with the affected tribe); *Santa Rosa Band of Indians v. Kings County*, 532 F.2d. 655 (9<sup>th</sup> Cir. 1975), cert. denied 429 U.S. 1038 (upholding 25 C.F.R. § 1.4); *People of South Naknek v. Bristol Bay Borough*, 466 F.Supp. 870 (D. Alaska 1979) (Taxation by local government prohibited).

<sup>108</sup> Bureau of Indian Affairs, Interior, Land Acquisitions in the State of Alaska, 79 Fed. Reg. 76888-76897 (2014).

<sup>109</sup> *Akiachak v. Jewell*, 995 F.Supp.2d 7 (D.D.C. 2014).

<sup>110</sup> Robert J. Wolfe, *Sensitive Tribal Areas on the Arctic Slope: An Update of Areas, Issues, and Actions in Four Communities*, Inupiat Community of the Arctic Slope, Barrow, Alaska (September 2013), at 8, citing Bylaws for the Traditional Beluga Hunt by the Tribal Village of Point Lay, June 27, 2008 (Point Lay Native Village, 2008).

<sup>111</sup> Elizaveta B. Ristroph, *Strategies for Strengthening Alaska Native Village Roles in Natural Resource Management*, 4 Willamette Environmental Law Journal 57, 119 (2016).

<sup>112</sup> *Inupiat Community of Arctic Slope v. United States*, 548 F.Supp. 182 (D. Alaska 1982), aff’d on other grounds, 746 F.2d 570 (9<sup>th</sup> Cir. 1984), cert. denied 474 U.S. 820 (1985).

miles from shore. This suggests that it would be difficult for a tribe to claim exclusive sovereign rights to the outer continental shelf of the Arctic Ocean.<sup>113</sup> Still, a tribe may be able to claim non-exclusive rights over offshore subsistence resources.<sup>114</sup> Non-exclusive rights would probably mean that NOAA and USFWS would have some rights to control fisheries and marine mammals and allocate resources in the claimed area among users.<sup>115</sup>

#### **4.8. Improved Communication**

Many participants at the Fairbanks Seminar felt that improved communication, outreach, and cooperation would be a better remedy than establishing new laws. Participants emphasized the importance of face-to-face communication through workshops (like this seminar) or one-on-one meetings.

One model for communication is that between the Alaska Eskimo Whaling Commission (AEWC) and oil vessels under the Conflict Avoidance Agreement for the bowhead whale.<sup>116</sup> The Agreement establishes equipment and procedures for communications between whalers and oil and gas industry participants; avoidance measures to be taken in the vicinity of subsistence hunting; and emergency measures.<sup>117</sup> The Agreement also lists contact information for representatives from each industry vessel and village as well as vessels that will be used in industry operations.<sup>118</sup>

It could be helpful to have a streamlined, regular system for communicating walrus haulouts between communities, regulatory agencies (particularly USFWS, NOAA, USCG, and FAA), and potential sources of disturbance (particularly vessel operators and pilots). A one-stop website that vessel operators and pilots are

<sup>113</sup> See also *Eyak Native Village v. Daley*, 364 F.3d 1057 (9<sup>th</sup> Cir. 2004), upheld by *Native Village of Eyak v. Blank*, 688 F.3d 619 (9<sup>th</sup> Cir. 2012), cert. denied 134 S. Ct. 51 (2013) (holding that “the federal paramountcy doctrine” barred the Native Villages’ aboriginal title claims to the OCS, including exclusive hunting and fishing rights); see also *North Slope Borough v. Andrus*, 642 F.2d at 611-12; see also *United States v. Rayonier, Inc.*, 627 F.2d 996, 1003 (9<sup>th</sup> Cir. 1980).

<sup>114</sup> In *Village of Gambell v. Hodel*, 869 F.2d 1273, 1278-80 (9<sup>th</sup> Cir. 1989), the Ninth Circuit held that ANCSA did not extinguish aboriginal claims to the OCS and left open the question of whether a tribe could assert “non-exclusive” subsistence rights in the OCS area.

<sup>115</sup> In *United States v. Washington* and other cases, the courts have interpreted treaty-reserved rights to be non-exclusive, and have therefore apportioned resource rights between tribal and non-tribal users. See, e.g., *United States v. Washington*, 384 F.Supp. 312 (W.D. Wash. 1974), aff’d, 520 F.2d 676 (9<sup>th</sup> Cir. 1975), aff’d sub. nom., *Washington v. Washington State Commercial Passenger Fishing Vessel Ass’n*, 443 U.S. 658 (1979). Such rights are also subject to regulation of seasons, manner of fishing, and size of take for purposes of conservation. See, e.g., *Puyallup Tribe v. Dep’t of Game*, 391 U.S. 392 (1968).

<sup>116</sup> E.g., Conflict Avoidance Agreement, §§ 103(a)(12), 104(b)(2). The Agreement operates during “Open Water Season” – the period of the year when ice conditions permit navigation or oil and gas operations to occur in the Beaufort Sea or Chukchi Sea.

<sup>117</sup> See *id.* § 102 (Purpose).

<sup>118</sup> *Id.* §§ 206, 401(a).

required to consult (whether by regulations, permits, or their insurers) could be helpful. This same information could also go in publications such as USCG's Local Notice to Mariners.

Alaska Native participants at the Fairbanks Seminar emphasized the importance of government-to-government consultation. Executive Order No. 13,175 requires each agency to "have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications."<sup>119</sup> USFWS and NMFS have specific consultation policies which would apply to activities related to marine mammals.<sup>120</sup>

#### **4.9. Seasonal Calendar**

Participants at Dr. Misarti's March 14, 2016 Walrus Research Workshop discussed the idea of seasonal calendar and map showing walrus migration and haulouts, which could help avoid impacts to walrus over space and time. A model could be the map maintained by the North Slope Borough Wildlife Management Department for the bowhead whale.<sup>121</sup> The challenge to such a map would be the pace of change in migration and haulout patterns. Using Geographic Information System (GIS) to create and update a walrus map could address this challenge. GIS software would allow a mapmaker to create "shapefiles" (including lines for routes, polygons for feeding areas, and dots for haulouts) linked to spreadsheet data describing the applicable season for the walrus location (i.e., "walrus travel along this route annually between May and August") and the most recently known occurrence (i.e., "2007 – present" or "1960s").

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<sup>119</sup> Exec. Order No. 13,175, 3 C.F.R. 304, 305 (2000), *superseding* Exec. Order No. 13084, 63 Fed. Reg. 27655, May 14, 1998, requires FWS and NMFS to consult with tribes when "undertaking to formulate and implement policies that have tribal implications." Secretarial Order No. 3206, American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act, August 27, 1999, explains the responsibilities of the Departments of the Interior and Commerce when actions taken pursuant to the Endangered Species Act may affect the exercise of American Indian tribal rights. Secretarial Order No. 3225, Endangered Species Act and Subsistence Uses in Alaska (Supplement to Secretarial Order No. 3206), January 19, 2001, clarifies the application of Secretarial Order No. 3206 to Alaska, and requires consultation as soon as any conservation concern arises regarding a species that is listed as endangered or threatened under the Endangered Species Act and also used for subsistence.

<sup>120</sup> USFWS, Native American Policy 510 FW 1, NOAA, January 20, 2016; NOAA Procedures for Government-to-Government Consultation with Federally Recognized Indian Tribes and Alaska Native Corporations, NOAA 13175 Policy, November 12, 2013, at 9 (May 10, 2017), available at <http://www.legislative.noaa.gov/policybriefs/NOAA%20Tribal%20consultation%20handbook%20111213.pdf>. Examples of actions requiring consultation include: a policy or action with effects on an Alaska Native village; a policy or action that may impact tribal trust resources or the rights of a tribe; and a policy or action that affects a tribe's traditional way of life. *Id.*

<sup>121</sup> North Slope Borough Bowhead Whale Subsistence Harvest Research (May 10, 2017), available at <http://www.north-slope.org/departments/wildlife-management/studies-and-research-projects/bowhead-whales/bowhead-whale-subsistence-harvest-research>.

## 5. Areas of Cooperation between Russians and Alaskans

### 5.1. Scientific Cooperation

There is a long history of cooperation between U.S. and Russian agencies on wildlife conservation, which continues between USFWS and its Russian Counterpart, Russia's Ministry of Natural Resources and Environment. Marine mammals, particularly polar bears, walrus, and sea otters, are a major focus of this cooperation, conducted through the Wildlife without Borders-Russia program, and USFWS's Alaska Marine Mammals Management Office.<sup>122</sup> This cooperation has continued despite funding challenges and political tension. One Fairbanks Seminar participant emphasized the importance of having working agreements or understandings between U.S. and Russian agencies, even if these are not binding agreements.

Fairbanks Seminar participants described collaboration on data collection and sharing. USFWS receives annual reports on subsistence harvest levels and the number of walrus deaths at coastal haulouts. Russian scientists are assisting USFWS in a project to collect walrus skin samples for DNA "fingerprinting." There were more workshops and meetings with Russian and U.S. scientists in the past to improve harvest estimates, but declines in funding have reduced these efforts to some extent.<sup>123</sup> In the next two years, Russian and American scientists will be collaborating on a walrus survey in the Bering Sea.<sup>124</sup>

Another area of scientific collaboration is the Pacific Walrus International Database, maintained by USGS, with data supplied by USFWS, USGS, UAF, and ADF&G on the U.S. side, and the Russian Academy of Science, Wrangel Island National Nature Reserve, and the Pacific Institute of Fisheries and Oceanography on the Russian side.<sup>125</sup> Data categories include land and ice haulout counts, sex/age composition, reproduction, mortality, harvest statistics, and morphometry.

### 5.2. Management Agreements

There are already models for U.S.-Russia wildlife management agreements, including the U.S.-Russia Polar Bear Treaty.<sup>126</sup> Arts. 6, 8, and 9 provide for a subsistence

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<sup>122</sup> US-Russia Marine Mammal Working Group (May 10, 2017), available at <http://www.fws.gov/international/wildlife-without-borders/russia/us-russia-marine-mammal-working-group.html>.

<sup>123</sup> Personal Communication with Jim MacCracken, USFWS, March 28, 2016.

<sup>124</sup> Emily Russell, *Russian and American Officials Sign Wildlife Management Agreement*, Alaska Public Media, March 29, 2016 (May 10, 2017), available at <http://www.alaskapublic.org/2016/03/29/russian-and-american-officials-sign-wildlife-management-agreement/>.

<sup>125</sup> USGS, Pacific Walrus International Database (May 10, 2017), available at <http://alaska.usgs.gov/science/biology/walrus/pwid/>.

<sup>126</sup> Agreement between the Government of the United States of America and the Government of the Russian Federation on the Conservation and Management of the Alaska Chukotka Polar Bear Population signed in 2000 and ratified by the United States in 2007 (May 10, 2017), available at <http://pbsg.npolar.no/en/agreements/US-Russia.html>.

harvest quota to be allocated equally between Alaska and Chukotka. Art. 8 provides for cooperation in scientific research, including traditional knowledge. In connection with the treaty, the Alaska Nanuuq Commission (which co-manages polar bear in the United States) signed a Native-to-Native Agreement with ATMMHC in 1997.

Another example is the agreement between the Alaska Eskimo Whaling Commission (AEWC) and the Association of Traditional Marine Mammal Hunters to share the bowhead quota with whaling communities in Russia.<sup>127</sup>

### **5.3. Other Forms of Exchange**

A number of groups have facilitated exchanges between Russian and U.S. walrus stakeholders, including Pacific Environment, World Wildlife Fund, Wildlife Conservation Society (WCS), the National Park Service's Shared Beringian Heritage Program, Eskimo Walrus Commission, North Slope Borough Department of Wildlife Management, Alaska Nanuuq Commission, and Alaska Eskimo Whaling Commission.

An example is the Workshop on Assessing Pacific Walrus Population Attributes from Coastal Haul-Outs, held March 19–22, 2012 in Anchorage, Alaska by USFWS, Wildlife Conservation Service, the Trust for Mutual Understanding, and the National Park Service. The workshop included some of the same Russian and U.S. participants as the 2016 seminar. Participants in that workshop, like those in the 2016 Fairbanks Seminar, emphasized the benefits of involving local residents in walrus management. But that workshop placed greater importance on the development of government regulations for aircraft and vessels near walrus haulouts, as well as management plans to protect haulouts and adjacent waters in the future Beringia National Park.<sup>128</sup>

The Shared Beringian Heritage Program has funded scientific and cultural projects related to marine mammals, sea ice patterns, climate change, reindeer herding, archaeology, and documentation of local traditions, language, and culture. This includes research to gather critical species and habitat information, documentation of traditional ecological knowledge, and the establishment of citizen-based science in the U.S. and Russia.<sup>129</sup>

The Bering Strait Messenger Network and the Institute of the North hold a Monthly Teleconference Dialogue between Chukotka and Alaska, on the Third Friday of each month (Alaska Time). The aim is to promote a relationship between Alaskans and Chukotkans who are interested in a changing Arctic and increased activity.<sup>130</sup>

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<sup>127</sup> NMFS, Notice; Notification of Quota for Bowhead Whales, 81 Fed. Reg. 8177, February 18, 2016.

<sup>128</sup> *A Workshop on Assessing Pacific Walrus Population Attributes from Coastal Haulouts*, *supra* note 47, at 86.

<sup>129</sup> NPS, Shared Beringian Heritage Program, Projects and Research (May 10, 2017), available at <https://www.nps.gov/akso/beringia/projects/index.cfm>.

<sup>130</sup> Institute of the North, Bering Strait Messenger Network (May 10, 2017), available at <https://www.institutenorth.org/calendar/events/bering-strait-messenger-network/>.

The visa-free program allowing travel by indigenous Chukotkans and Alaskans has also facilitated exchange. The program started with a 1989 agreement between the U.S. and U.S.S.R.<sup>131</sup> Since 2015, indigenous peoples from qualified regions in Alaska and Chukotka have been able to travel without a visa for limited periods at the invitation of a relative or tribal member.<sup>132</sup>

## 6. Recommendations on Policies and Practical Steps

### 6.1. Protected Areas

Neither regulatory nor indigenous participants at the Fairbanks Seminar had a strong interest in designating protected areas for the benefit of walrus. Advocates for walrus protection should conduct further outreach to get more insight into what kinds of protected areas, if any, stakeholders would support. Stakeholders may be more likely to support measures that target specific sources of disturbance (i.e., areas that vessels of a certain size should avoid) rather than creating a sanctuary that could limit walrus harvest and fishing activity. The efforts by U.S.-based groups to promote an internationally recognized ship routing scheme with Areas to Be Avoided and speed limits in the Bering Sea could garner support from many stakeholders, as similar efforts have been supported in the Aleutians and with AEWC's Conflict Avoidance Agreement.

### 6.2. Transferring Management Responsibilities

Both Russian and U.S. wildlife management agencies are grappling with less funding, even as management challenges (melting sea ice, increasing vessel traffic, and development prospects) are increasing. At the same time, communities on both sides of the International Dateline have expressed frustration with top-down management from afar. There may be a way to address both issues by transferring more management responsibilities to communities. This is certainly easier said than done, particularly since U.S. laws require agencies to take on certain duties, and they can be sued for failure to carry them out.

Still, U.S. law does allow for co-management. Many of the co-management agreements described by participants are focused on subsistence monitoring rather than minimizing disturbances to walrus haulouts. Agencies could work with

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<sup>131</sup> USSR-US: Agreement Concerning the Bering Straits Regional Commission, 28(6) International Legal Materials 1429 (1989) (May 10, 2017), available at <http://www.jstor.org/stable/20693380>.

<sup>132</sup> Emily Russell, *Visa-Free Travel to Russia Reinstated for Eligible Alaska Natives*, Alaska Public Media, August 11, 2015 (May 10, 2017), available at <http://www.alaskapublic.org/2015/08/11/visa-free-travel-to-russia-reinstated-for-eligible-alaska-natives-2/>; Jennifer Monaghan, *Bilateral Visa Waiver Announced for Indigenous Peoples of Alaska, Russia's Chukotka*, Moscow Times, July 23, 2015 (May 10, 2017), available at <http://www.themoscowtimes.com/news/article/bilateral-visa-waiver-announced-for-indigenous-peoples-of-alaska-russias-chukotka/526095.html>.

communities and entities like EWC on expanded management agreements, in which communities and hunters are trained to be the “first responders” to terrestrial haulouts by minimizing disturbances. Hunters could also be trained to do some of the scientific work that agencies are doing now (i.e., deploying satellite-linked tags to monitor movements and feeding behavior). NGOs could play a supporting role by facilitating training workshops and helping to draft expanded co-management agreements that provide for clear, meaningful community management rules. Some of this cooperation has already taken place organically, in the form of cooperation between ADF&G and other agencies with hunters, and Russian scientists like Anatoly Kochnev and the Haulout Keepers.

### **6.3. Cooperation with the Private Sector**

Walrus hunters (acting through an entity like EWC) and other advocates for walrus protection could explore ways to have ships and aircraft voluntarily avoid hunting and haulout areas, whether or not these areas have any official protected status. As mentioned above, AEWC has been able to get oil and gas and barging companies to voluntarily adhere to Conflict Avoidance Agreements. These agreements, updated yearly, set out hunting areas and times when these areas must be avoided. They also provide for communications between ships and a village-based communications center. A similar agreement might be made between EWC and operators of large vessels expected to transit through the Bering and Chukchi Seas.

One challenge to this is that the volume of transit is likely to be much greater than that which has been involved in oil and gas activities in the Chukchi and Beaufort Seas; and much of the traffic will be non-U.S. vessels considered to be in “transit passage” (which is difficult to regulate).<sup>133</sup> The development of guidelines rather than agreements could be more feasible.

EWC and advocates could consider approaching major liability insurers for ships (and possibly aircraft) to explore the possibilities of having insurance policies require or incentivize any special areas, buffers, or minimum altitudes suggested by these guidelines. Likewise, EWC and advocates could ask flag states to require their vessels to comply with these guidelines.<sup>134</sup>

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<sup>133</sup> There are limits to laws that coastal states can pass to regulate vessels in transit, though this should not stop a non-state entity from trying to obtain voluntary compliance. See Convention on the Law of the Sea, December 10, 1982, 1833 U.N.T.S. 3, Arts. 38(2), 42; Restatement (Third) of Foreign Relations Law § 513 cmt. j (1987); 33 U.S.C. § 1223(d) (generally exempting foreign vessels in innocent or transit passage from the Ports and Waterways Act except where authorized by a treaty or where the vessel is destined for or departing from a port or place subject to the jurisdiction of the United States); 33 C.F.R. §§ 160.103(c), 164.02 (providing exemptions for certain foreign vessels in innocent or transit passage).

<sup>134</sup> Currently, there are no clear requirements by liability insurers (Protection and Indemnity Clubs) for their insured to adhere to guidelines or voluntary measures to protect marine wildlife. Layla Hughes, Marine Insurance: Measures to Protect Arctic Marine Mammal Hunters and Subsistence (November 2014) (on file with the author). A liability insurer for a ship generally requires the insured to have an “ISM Certificate” from its flag state. This certificate reflects compliance with the International Management Code for the

#### **6.4. Adaptable Calendar Map with Regulatory Option**

Since walrus haulouts are likely to continue shifting with the changing climate, management policies should not be tied to particular geographic locations. As discussed above, a more adaptive response could be based on a GIS map showing walrus migration routes, feeding areas, and haulouts, with links to the time of year these are in use and the last known dates of use.<sup>135</sup> If there is consensus among walrus hunters and communities that they would like to include subsistence areas on the map, these could also be included. This map could cover the entire Pacific Walrus population range, from Alaska to Chukotka.

The map would need to be regularly updated in order to be effective. Routes, areas, and haulouts that are no longer in active use could be transferred to a different GIS “layer,” so the current/active areas could be easily seen by any user. There would have to be willingness on the part of each agency to post its data, or a third party (perhaps a NGO) could take on the task of regularly requesting data from each agency and updating the map. As a condition of any agency-issued permit in which walrus monitoring is required, the permittee would be required to update the map with observations (or provide this information to a third-party “map keeper”).

Future regulations, guidelines, and permit restrictions (whether voluntary or mandatory) could tie minimum aircraft altitudes and vessel buffers to the routes, areas, haulouts, and subsistence areas shown on the map, rather than static points. For example, a permit stipulation for a cruise ship might be “Maintain a buffer of 0.5 mile from all current/active walrus migratory routes, feeding areas, and haulouts, as shown on [GIS layer name] on [GIS map name] at [website address]. Permittee must consult [GIS map] prior to departing each port. While traveling, any walrus sightings should [or must] be reported to [name of map keeper].” There could also be provisions for Areas to Be Avoided and speed limits in these locations. If such a map proves to be a successful tool for avoiding disturbance to walruses, it could be expanded to other marine mammals.

An example of a privately maintained website used for regulatory purposes is the publicly accessible FracFocus Chemical Disclosure Registry, <https://fracfocus.org/>. Alaska regulations<sup>136</sup> (in addition to those of some other states) require those who conduct hydraulic fracturing to provide information regarding the chemical content of fracturing fluids to the entities that maintain this website (Groundwater Protection Council and Interstate Oil and Gas Compact Commission).

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Safe Operation of Ships and for Pollution Prevention, which was adopted by the International Maritime Organization through Resolution A.741(18), November 4, 1993. In the absence of such a certificate, coverage could be denied. Personal Communication with Charles Dymoke, Lodestar Marine Limited, April 8, 2016. If a flag state requires adherence to guidelines or voluntary ATBAs in order to obtain an ISM Certificate, then insurance companies will recognize this. *Id.*

<sup>135</sup> The idea of a seasonal calendar map was first raised and discussed at the Walrus Research Workshop.

<sup>136</sup> 20 AAC 25.283(i)(1).

### **6.5. Coordinating Website, Newsletters, and Calls**

Participants at the Fairbanks Seminar repeatedly emphasized the need for a coordinating website to bring together past, ongoing, and proposed research.<sup>137</sup> Such a website would be particularly helpful if it included information from both Russia and the United States (ideally in both Russian and English) and applicable laws and guidelines. It could also link to all of the regulatory agency and university websites applicable to walrus research and management, as well as permits issued by these agencies that contain stipulations for walrus protection.<sup>138</sup> If an adaptable GIS map is created, it could be hosted from this site. The existing Pacific Walrus International Database could be developed into a larger coordinating website that serves this purpose, or the website created at the Walrus Research Workshop (<http://www.walrusscience.com>) could be used. A NGO or division of a university (perhaps the University of Alaska-Fairbanks) could take on the role of website coordinator, ensuring that it is regularly updated.

Another NGO role would be to review the website regularly and develop newsletters on recent developments in research, management, and development activities. These newsletters could be circulated to communities and individuals that may not have regular Internet access.

Still another NGO role could be to coordinate a regularly held, toll-free conference call with a broad range of stakeholders (including walrus hunters, regulatory agencies, and vessel and aircraft operators) where community residents could report disturbances and ask for corrective action. Perhaps agencies with the regulatory authority to issue permits to vessels or vessel insurers could require participation in these teleconferences.

### **6.6. Ensure that Consideration of Walrus Haulouts is “Mainstreamed” into Bering/Chukchi Planning**

At the Fairbanks Seminar, participants emphasized the need to avoid viewing walrus management in isolation, but as part of a larger system. Stand-alone walrus protection plans and stipulations may get lost in the shuffle of efforts to protect and manage the many Bering and Chukchi species that are ecologically valuable and important to subsistence communities. It would be helpful to design plans, rules, and guidelines that apply more broadly to marine mammals. That said, walruses may have different needs from other species, relating to their dependence on sea ice and particular food sources.

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<sup>137</sup> The idea of a coordinating website with links to research from various agencies was first raised and discussed at Dr. Nicole Misarti’s March 14, 2016 Walrus Research Workshop.

<sup>138</sup> It could also link weather forecasts geared toward walrus and marine mammal stakeholders, such as Sea Ice for Walrus Outlook (SIWO) (May 10, 2017), available at <https://www.arcus.org/search-program/siwo>.

Protection measures for walrus (and other marine mammals) should be integrated into larger plans for the Bering/Chukchi region. For example, any ship routing, vessel traffic scheme, or areas to be avoided under consideration by USCG should take into account walrus migratory routes, feeding areas, and haulout locations (in addition to those of other species). Likewise, plans to prevent and respond to oil spills should consider these locations. In the absence of an adaptable GIS map, NGOs can play a role by ensuring that planning agencies have access to current information about these locations.

### **6.7. Future Exchanges**

Bringing stakeholders together from remote communities in Chukotka and Alaska is extremely time-consuming and expensive, leading to reliance on websites, newsletters, teleconferences, Skype communications, and social media. As important as these channels of communication are, they do not adequately substitute for face-to-face conversation in terms of fostering learning and mutual respect.<sup>139</sup> It is important that exchanges like the 2016 Fairbanks Seminar continue to occur, and that they involve young people and non-traditional partners. NGOs and universities can play an important role by continuing to facilitate exchanges like this one.

## **Conclusion**

The March 15–16, 2016 Fairbanks Seminar to discuss walrus management in Alaska and Chukotka was helpful in joining stakeholders in the Pacific Walrus population – stakeholders who are seldom brought together in face-to-face meetings. The seminar highlighted common challenges in Chukotka and Alaska, including the gaps between higher level agencies and indigenous Chukchi/Bering communities who hunt walrus and manage them on a daily basis.

The following strategies for protecting walruses and supporting the communities that depend on them are based on suggestions raised at the seminar and additional research. Most are more likely to be feasible on the U.S. side, but some could involve international cooperation. While these strategies are geared toward walrus protection, they could potentially apply to other marine mammals. As emphasized at the seminar, it is important not to think of walruses in isolation, but as part of a larger ecosystem involving Chukotkan and Alaskan communities.

- **Protected Areas:** Conduct outreach to get more insight into what kinds of protected areas, if any, stakeholders would support. Consider protections that target specific sources of disturbance rather than allow for potential hunting restrictions.

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<sup>139</sup> See Frances Westley, *Governing Design: The Management of Social Systems and Ecosystems Management in Panarchy: Understanding Transformations in Human and Natural Systems* 402 (L.H. Gunderson & C.S. Holling (eds.), Washington, D.C.: Island Press, 1995); Richard D. Magerum, *Beyond Consensus: Improving Collaborative Planning and Management* 48 (Cambridge, MA: MIT Press, 2011).

- **Co-Management and Delegation:** Explore ways to transfer more management responsibilities to communities. This may involve better utilization of U.S. laws providing for co-management, organically created co-management agreements, or management training workshops sponsored by NGOs, universities, or agencies.
- **Cooperation with the Private Sector:** Explore ways to have ships and aircraft voluntarily avoid hunting and haulout areas through agreements with major industry operators, or by advocating for insurance policies that require or incentivize compliance with voluntary guidelines.
- **Adaptable Calendar Map with Regulatory Option:** Create a publicly accessible, regularly updated Geographic Information Systems map showing migration routes, feeding areas, haulouts, and possibly subsistence areas throughout the Bering and Chukchi Seas. Establish voluntary buffers and altitude restrictions based on this map (with the potential for mandatory measures later on).
- **Coordinating Website, Newsletters, and Calls:** Establish a single, regularly updated website to keep track of past, ongoing, and proposed research as well as guidelines, laws, permits, and advisories applicable to Russia and the United States. Prepare newsletters on recent developments in research, management, and development activities to circulate to communities and individuals that may not have regular Internet access. Hold conference calls with stakeholders where community residents could report disturbances and ask for corrective action.
- **Ensure that Consideration of Walrus Haulouts is “Mainstreamed” into Bering/Chukchi Planning:** Ensure that protection measures for walrus (and other marine mammals) are integrated into larger plans for the Bering/Chukchi region (such as oil spill plans).
- **Future Exchanges:** Facilitate exchanges that bring together stakeholders from remote communities in Chukotka and Alaska along with regulators, researchers, NGOs, and scientists from both sides of the International Dateline.

### Acknowledgement

I am grateful to all who participated in the seminar that led to this article and especially grateful for the input I received on a draft version from Eduard Zdor, Association of Traditional Marine Mammal Hunters of Chukotka; Ed Weiss, Alaska Department of Fish and Game; Henry Huntington, Huntington Consulting; Jill-Marie Seymour, Bureau of Ocean Energy Management; Jacki Holzman, Federal Aviation Administration; Roy Ashenfelter, Kawerak, Inc.; Curtis Nayokpuk, Shishmaref hunter; Jim McCracken, U.S. Fish and Wildlife Service; Megan Ferguson, National Oceanic

and Atmospheric Administration; Kelsey Aho, University of Alaska-Fairbanks (UAF); and Katya Selvestru, Pacific Environment. I am extremely grateful to Nicole Misarti (UAF), who hosted a seminar on March 14, 2016 entitled "Community Priorities for Walrus Research Workshop," with funding from the National Science Foundation. The seminar I hosted was made possible by Pacific Environment with funding from the Trust for Mutual Understanding.

## References

Bourne J.K., Jr. *In the Empty Arctic, How to Get the Job Done? With A Drone*, National Geographic, April 14, 2016 (May 10, 2017), available at <http://news.nationalgeographic.com/2016/04/160414-Arctic-drones-wildlife-fire-oil-spill-environment/>.

*Climate Change 2014: Impacts, Adaptation, and Vulnerability: Summaries, Frequently Asked Questions, and Cross-Chapter Boxes*, A Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (C.B. Field et al. (eds.)), Geneva: World Meteorological Organization, (2014).

Crawford J. et al. *Results from Village-Based Walrus Studies in Alaska, 2011*, Alaska Marine Science Symposium, January 16–20, 2012, Anchorage, AK (May 10, 2017), available at [https://www.researchgate.net/publication/290437169\\_Results\\_from\\_village-based\\_walrus\\_studies\\_in\\_Alaska\\_2011](https://www.researchgate.net/publication/290437169_Results_from_village-based_walrus_studies_in_Alaska_2011).

Crawford J. et al. *Results from Village-Based Walrus Studies in Alaska, 2012*, Alaska Marine Science Symposium, January 21–25, 2013, Anchorage, AK (May 10, 2017), available at [https://www.researchgate.net/publication/290437175\\_Results\\_from\\_village-based\\_walrus\\_studies\\_in\\_Alaska\\_2012](https://www.researchgate.net/publication/290437175_Results_from_village-based_walrus_studies_in_Alaska_2012).

Higdon J.W. et al. *Killer Whales (Orcinus Orca) in the Canadian Arctic: Distribution, Prey Items, Group Sizes, and Seasonality*, 28(2) Marine Mammal Science (2012).

Huntington H. et al. *Traditional Knowledge Regarding Walrus near Point Lay and Wainwright, Alaska*, Final report to the Eskimo Walrus Commission and the Bureau of Ocean Energy Management for contract (2012) (May 10, 2017), available at [https://www.adfg.alaska.gov/static/research/programs/marinemammals/pdfs/2012\\_traditional\\_knowledge\\_pt\\_lay\\_and\\_wainwright.pdf](https://www.adfg.alaska.gov/static/research/programs/marinemammals/pdfs/2012_traditional_knowledge_pt_lay_and_wainwright.pdf).

Huntington H. et al. *Traditional Knowledge Regarding Walrus, Ringed Seals, and Bearded Seals near Barrow, Alaska*, Final report to the Eskimo Walrus Commission, the Ice Seal Committee, and the Bureau of Ocean Energy Management for contract (2015) (May 10, 2017), available at [https://www.adfg.alaska.gov/static/research/programs/marinemammals/pdfs/2015\\_traditional\\_knowledge\\_barrow.pdf](https://www.adfg.alaska.gov/static/research/programs/marinemammals/pdfs/2015_traditional_knowledge_barrow.pdf).

Magerum R.D. *Beyond Consensus: Improving Collaborative Planning and Management* (Cambridge, MA: MIT Press, 2011).

Oakley K.L. et al. *Changing Arctic Ecosystems: Polar Bear and Walrus Response to the Rapid Decline in Arctic Sea Ice*, 2012-3131 USGS Fact Sheet (2012) (May 10, 2017), also available at <http://pubs.usgs.gov/fs/2012/3131/>.

Pungowiyi P. *Avoiding Haul-Out Disturbance on St. Lawrence Island in A Workshop on Assessing Pacific Walrus Population Attributes from Coastal Haulouts*, National Park Service Headquarters Anchorage, Alaska, March 19–22, 2012 (February 2013) (May 10, 2017), available at [http://www.pacificenvironment.org/wp-content/uploads/2017/02/walrus-mgmt-report\\_final\\_gl.pdf](http://www.pacificenvironment.org/wp-content/uploads/2017/02/walrus-mgmt-report_final_gl.pdf).

Ristroph E.B. *Loosening Lips to Avoid Sinking Ships: Designing a Ship Communications System for the Bering Strait Region*, 24(3) *Indiana International & Comparative Law Review* (2014).

Robards M. & Joly J.L. *Interpretation of “Wasteful Manner” Within the Marine Mammal Protection Act and Its Role in Management of the Pacific Walrus*, 13 *Ocean and Coastal Law Journal* (2008).

Udevitz M.S. et al. *Potential Population-Level Effects of Increased Haulout-Related Mortality of Pacific Walrus Calves*, 36(2) *Polar Biology* (2013).

Van Dyke J.M. & Broder S.P. *Particular Sensitive Sea Areas; Protecting the Marine Environment in the Territorial Seas and Exclusive Economic Zones*, 40 *Denver Journal of International Law and Policy* (2011).

Van Hemert C.R. et al. *Forecasting Wildlife Response to Rapid Warming in the Alaskan Arctic*, 65(7) *BioScience* (2015).

Westley F. *Governing Design: The Management of Social Systems and Ecosystems Management in Panarchy: Understanding Transformations in Human and Natural Systems* (L.H. Gunderson & C.S. Holling (eds.), Washington, D.C.: Island Press, 1995).

### **Information about the author**

**Elizaveta Ristroph (Fairbanks, USA)** – Principal, Ristroph Law, Planning, and Research (129 8<sup>th</sup> Avenue, Fairbanks, Alaska, 99701, USA; e-mail: [ebristroph@gmail.com](mailto:ebristroph@gmail.com)).