

**• Greater SE Alaska Conservation Community • Alaska Wildlife Alliance •  
• Tongass Conservation Society • Greenpeace • Center for Biological Diversity •**

Alaska Board of Game  
c/o ADF&G, Boards Support Section  
by FAX: 907-465-4094

December 28, 2012

Subj: **Unit 1A: Comments on “Feasibility Assessment ... Black-tailed deer”**

Dear Board of Game members;

These are jointly submitted comments of five organizations on the Alaska Department of Fish & Game’s October 2012 *Feasibility Assessment for Maintaining or Increasing Sustainable Harvest of Sitka Black-tailed Deer in a Portion of Game Management Unit 1A*, hereafter called the “Assessment.” ADF&G’s proposal in the Assessment is to eradicate wolves on Gravina Island, which is a portion of the Unit.

The commenting organizations are: Greater Southeast Alaska Conservation Community (GSACC), Alaska Wildlife Alliance (AWA), Tongass Conservation Society, Greenpeace, and Center for Biological Diversity (CBD). Although we have differing policies or outlooks on whether or not the harvest of wolves is appropriate in general, we are united in commenting that the intensive management (IM) proposed in the Assessment should not be pursued. In summary, we believe that pursuit of the program of wolf eradication proposed in the Assessment is unwise and unsupported by the facts.

GSACC is a Southeast Alaskan conservation non-profit organization, formed in 2011, which seeks to foster protection of Southeast Alaska’s fish, wildlife and their habitats. Its membership uses public lands throughout the region.

AWA, founded in 1978 and with a board composed entirely of Alaskans, is the only Alaskan-based group dedicated entirely to the sound management of Alaska’s wildlife. AWA promotes an ecosystem approach to wildlife management with an emphasis on the non-consumptive values of wildlife.

TCS, based in Ketchikan, has a long been involved in land management planning processes throughout Southeast Alaska. The membership is primarily Alaskans who use the region’s lands, fish and wildlife and have interests in the management of these natural resources. The membership includes commercial fishermen, Alaska Natives, tourism and recreation business owners, hunters and guides and citizens who use the region for business, recreation, scientific research and subsistence.

Greenpeace is a non-profit environmental organization whose mission is raising public awareness of environmental problems and promoting changes for a green and peaceful future. Involvement in the natural resource issues of the Southeast date to the early 1990s, and the long-time staffer here is a 36-year resident of the region. Work has included reducing the impacts of logging and associated road construction on ecosystems, toward the perpetuation of opportunities to fish, hunt and observe wildlife.

CBD is a non-profit environmental advocacy organization with more than 300,000 members and online activists dedicated to conservation and recovery of species at risk of extinction, and their habitats. Center members, activists and staff maintain long-standing interests in clean water and biological diversity in Southeast Alaska.

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### ***I. Our Recommendations and Requests***

For the reasons provided in the sections below, we recommend and request that the Board of Game:

- (1) declare that the Unit-1A Feasibility Assessment is incomplete, based on information and deer objectives that are outdated, and does not present a basis for intensive management of wolves; and
- (2) direct ADF&G to propose new deer population and harvest objectives for consideration at the next meeting of the Board, and that the department not reconsider IM objectives for deer in Unit-1A until new population and harvest objectives have been established by the Board.

### ***II. The Deer Objectives Are Outdated and Therefore Do Not Support Wolf IM.***

The current objectives for deer population and deer harvest in Unit-1A are outdated because they are based on older deer modeling which produced over-estimates of the carrying capacity of winter habitat.

**A. The current deer objectives for Unit 1-A, and how they were determined.**

The current deer population and harvest objectives for Unit-1A were adopted by the Board of Game in 2000, setting them at 15,000 and 700 respectively. (Assessment at 7). They are based in large part on the Forest Service’s 1997 deer model, which was used to estimate the winter carrying capacity of the habitat for deer, and on harvest rates from 1994 to 1999 which were the peak years for the Unit. (Id.). The Assessment itself recognizes that these objectives are “unrealistically high.” (Assessment at 7, 18). Over the past five years the Unit-1A deer harvest ranged from 154 to 309 (Assessment at 7), but this does not include illegal take which the department estimates to be around 50% of the harvest estimated from hunter surveys. (Assessment at 30, 36). Thus, the actual total harvest over the past five years likely ranged from about 230 to 460, in comparison to the 700. This approaches two-thirds of the objective.

**B. Problems with the deer model results that the harvest objective was based upon.**

The Board of Game, in its 2000 determination of Unit-1A deer population and harvest objectives, relied upon deer carrying capacity data from the Forest Service’s 1997 deer model. (Assessment at 7, 18). The Forest Service updated its model for the 2008 Tongass Forest Plan, and the new model<sup>1</sup> makes significantly lower carrying capacity estimates.

Three corrections made to the model since 2000 were substantial:

(1) In its FY-2000 Monitoring & Evaluation Report (published April 2001),<sup>2</sup> the Forest Service corrected the conversion factor (called the Deer Multiplier) used to change the model’s non-dimensional output to carrying capacity in deer per square mile, from 125 to 100.<sup>3</sup> The Deer Multiplier is based on deer pellet transect data, and is the carrying capacity of best quality habitat (of which very little exists). The older model results in over-estimated carrying capacity by 25%. From the information in the Assessment we don’t know which multiplier had been used when the Board of Game set the Unit-1A objectives.

However; regarding the Deer Multiplier, Gravina Island is a special case as ADF&G itself explained to the Forest Service in 2002 regarding the Gravina Island Timber Sale Project:<sup>4</sup>

“Deer model. Our concerns for sustainability of deer harvests on Gravina stem in part from the reported results of runs of the deer model for the DEIS, as well as analysis of hunter demand. The coefficients used for these runs very likely underestimate the effects of the project upon deer, leading to overly optimistic projections of true deer numbers and future availability. The model was run with a multiplier of 125 deer per square mile, as directed by the 1997 Forest Plan, although a multiplier of 100 deer per square mile has been recommended by both FS and ADF&G biologists.

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<sup>1</sup> When we speak here of a “version” of the model, this encompasses the core of the model and the vegetative data and directives for some external settings that are used when carrying capacity in deer per square mile is calculated from the model’s non-dimensional output. The core of the model has not changed over the years, only the other factors in its application.

<sup>2</sup> USFS R10-MB-431, at 2-155.

<sup>3</sup> The multiplier represents the winter carrying capacity of the highest quality habitat type; however, this kind of habitat is scarce.

<sup>4</sup> This timber sale project was not executed. As a result of an administrative appeal of the project decision (Greenpeace et al. 2004) to the next highest level of the Forest Service, the project decision was withdrawn. However, since that time a significant amount of logging in high quality deer habitat has occurred on Gravina Island, done under timber sales by Alaska DNR and the Alaska Mental Health Trust.

In the September 13 meeting, Gene DeGayner indicated that the FS intends to use a multiplier of 100 deer per square mile for habitat scores of 1.0 from this point forward, unless project-level data suggest otherwise. In general, ADF&G recommends assuming a maximum **year-round** carrying capacity of 35 to 40 deer per square mile in the best habitat. After consultation with ADF&G research biologists Matt Kirchhoff and Dave Person, **we recommend equating a multiplier of 35 deer per square mile to a score of 1.0 for the Gravina project area**, due to the lack of high-value alpine habitat, indicating a non-migratory deer population that occupies the area all year, with little seasonal variation. (See the Appendix for a more detailed discussion of application of the deer model.)”

(ADF&G Habitat Div. letter to Alaska OMB, 12 Dec. 2002, at 3 to 4. Orig. emph.). Thus, for Gravina Island, reliance on Deer Multipliers of 125 or 100 would result in over-estimations of carrying capacity of a factor of 3.57 (a 257% over-estimation) or 2.85 (a 185% over-estimation).

(2) In 2008 the Forest Service made a further correction to use of the Deer Multiplier.<sup>5</sup> From 1997 through 2007 the scale for the non-dimensional habitat value outputs was a range “habitat suitability index (HSI)” of from zero to 1.3. The value 1.3 represents best quality habitat. However, the way the Deer Multiplier was used during those years, it corresponded to a value of 1.0 in that range, which is incorrect and results in a 30% over-estimation of carrying capacity. If these and the previous error were both present in the data the Board considered in setting the objectives, the total error was a 62.5% carrying capacity over-estimation.

(3) The vegetative dataset used in the 1997 deer model was later found by a Forest Service statistical study to be uncorrelated to habitat quality. (Caouette et al. 2000).<sup>6</sup> An adequate dataset was not used until adoption of the 2008 Tongass Forest Plan. The new dataset “results in an overall reduction in average HSI<sup>7</sup> values because fewer stands would be classified as high and medium volume strata and more stands would be classified as low volume strata compared to the old volume strata mapping used in the 1997 Forest Plan Revision Final EIS.” (2008 Forest Plan FEIS at 3-265 to 266). This change resulted in significantly lower carrying capacity estimates by the new model, nearly everywhere in the Tongass, but the changes were not the same everywhere because the previous dataset’s non-correlation to habitat quality had made the amount of error erratic.

### **C. The Amount of Deer Modeling Error, As Incorporated in the Unit-1A Objectives.**

The 2008 corrections made by the Forest Service to its 1997 modeling of deer winter habitat carrying capacity indicate that the 1997 modeling made these over-estimations:

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<sup>5</sup> 2008 *Tongass Forest Plan (TLMP) FEIS*, at 3-266: “HSI values were standardized to range from 0 to 1.0, by dividing all values by 1.3, because outputs from such models represent a range from 0 to 100 percent habitat suitability, with higher values indicating higher habitat capability.” Also at 3-284 in footnote 2: “Habitat capability in terms of deer density calculated using a multiplier of 100 deer persquare mile equating to a habitat suitability index score of 1.0.”

<sup>6</sup> Caouette, J.; Kramer, M.; & Nowacki, G. (2000). *Deconstructing the Timber Volume Paradigm in Management of the Tongass National Forest*. USDA Forest Service, Pacific Northwest Station. PNW-GTR-482. 20p. [http://tongass-fpadjust.net/Documents/Caouette\\_eta\\_%202000\\_GTR482.pdf](http://tongass-fpadjust.net/Documents/Caouette_eta_%202000_GTR482.pdf)

<sup>7</sup> HSI is habitat suitability index, the non-dimensional output of the model that was mentioned in a previous footnote.

**Fig. 1: Over-estimations of the earlier model.**

Unit 1-A	<b>39%</b>	<b>Over-estimation</b>
Gravina Island	<b>77%</b>	<b>Over-estimation</b>
Revillagigedo Island	<b>60%</b>	<b>Over-estimation</b>
Cleveland Peninsula	<b>34%</b>	<b>Over-estimation</b>

(See calculations in Fig. 2, next page.) But percentages don’t tell the whole story. The Tongass Forest Plan has a standard and guideline of providing a deer habitat carrying capacity of at least 18 deer per square mile (where possible), in order to sustain both wolves and deer hunters. ADF&G has advocated the use of this standard and guideline (S&G), and the department played a major role in its adoption by the Forest Service. Note in Fig. 2 that according to the 1997 modeling that two major historic hunting areas for Ketchikan residents, the Cleveland Peninsula and Revillagigedo Island, scored above the S&G at 18.8 and 18.3 deer per square mile, respectively. However, according to the 2008 model for the current (2006) condition they scored well below the S&G at 13.6 and 11.7 deer per square mile. Moreover, Gravina Island was already below the S&G in 1995 at 13.0, but with the revised modeling (and when using ADF&G’s recommended Gravina Island Deer Multiplier of 35) it was at 7.3 deer per square mile in 2006.

Accordingly, after assessing the improved modeling results it is unsurprising that the harvest of deer and the amount of hunter effort in Unit-1A have declined and that deer numbers are low, particularly after recent hard winters.

It is important to note that not all of the difference between the modeling of the 1995 and 2006 current conditions is due to corrections to the model. In that 11-year interim, second growth timber in clearcuts over about 25 years old entered the stem exclusion stage, which dropped their contribution to carrying capacity to essentially zero. Furthermore, the future stem exclusion condition of other second growth which was less than 25 years old in 2006 (or not yet created by clearcutting) is not reflected in Fig. 2.

The point here is that the deer modeling basis for the current deer population and harvest objectives that were set by the Board of Game in 2000 is no longer valid. An urgently needed action by the Board is to update those objectives. It is not valid to initiate a program of wolf intensive management on the basis of the outdated objectives. Moreover, if the Board acts contrary to wolves because prey is under-abundant for both wolves and meeting deer harvest objectives, we believe that is an indicator that listing the Alexander Archipelago wolf under the Endangered Species Act is warranted.

### ***III. The Habitat & Ecosystem Situation Is Such That Wolf IM Is not Feasible in Unit-1A.***

#### ***A. Current model results for Unit-1A show that low original deer habitat capability and subsequent loss of old-growth habitat are the problem.***

The deer habitat capability results in Fig. 2 from the 2008 deer modeling indicate that, in times of average winters (which is what the model predicts) or worse, Unit-1A is incapable of supporting a large harvest of deer. A large harvest may be possible in multi-year periods of mild weather if the browse recovers adequately from harder winters, and the peak years of harvest upon which the current harvest objective was set may be indicative of such a situation. However, since that time in the mid-1990s many then-recent clearcuts have reached the stem exclusion stage and additional clearcuts have been created that in the

Fig. 2: Unit-1A Deer Model Carrying Capacities by WAA, for 1997 vs. 2008 models

Edwards (23Dec12, for BoG comments)

WAA Location	WAA Number	1997 Model	2008 Model	Model Comparison	If Deer Mult. = 35	Land Area (sq-mi)	Land Area (sq-mi)	1997 Model	2008 Model	1997 Model	2008 Model	
		1995 Carrying Capacity	2006 Carrying Capacity	1995 Over-estimation	2006 Carrying Capacity			Area Weighted Capacity	Area Weighted Capacity	Carrying Capacity	Carrying Capacity	
Gravina	101	13	21	-38%	7.3	62.1	62	807	455	13.0	7.3	Gravina I.
Duke I.	303	19	18	3%	-	73.3	73	1393	1348	19.0	18.4	Duke I.
Revilla, east shore	404	22	12	86%	-	281.4	1,076	6191	3321	18.8	11.7	Revilla Island
Revilla, Thorne Arm to Behm	405	24	18	34%	-	83.4		2002	1495			
Revilla, Carroll Inlet	406	20	12	64%	-	194.6		3892	2374			
Revilla, George Inlet	407	13	15	-12%	-	64.2		835	953			
Revilla, Ketchikan	408	7	13	-46%	-	26.0		182	335			
Revilla, Clover to Francis	509	17	14	25%	-	105.6		1795	1431			
Revilla, Traitors to Bell I.	510	17	10	79%	-	237.1		4031	2252			
Revilla, Burroughs Bay	511	15	5	195%	-	83.3		1250	424			
Cleveland, Spacious Bay	612	20	18	13%	-	107.9	358	2158	1907	18.3	13.6	Cleveland Pen.
Cleveland, Helm Bay	613	24	19	29%	-	71.0		1704	1321			
Cleveland, Meyers Chuck	614	15	20	-24%	-	20.5		308	407			
Cleveland, base	715	15	8	92%	-	158.7		2381	1238			
Unuk River	716	3	4	-21%	-	523.8	524	1571	1980	3.0	3.8	Mainland
Chickamin & Walker Cove	717	8	4	79%	-	227.0	227	1816	1012	8.0	4.5	
Rudyerd Bay	719	4	4	-8%	-	311.9	312	1248	1354	4.0	4.3	
Smeaton Bay	821	15	9	67%	-	173.4	173	2601	1554	15.0	9.0	
Boca de Quadra	822	10	8	18%	-	608.9	609	6089	5170	10.0	8.5	
Unit 1-A total							3,414	42,251	30,330	12.4	8.9	UNIT-1A

**Overall deer carrying capacity over-estimations of the 1997 model:**

Unit-1A:	39%
Gravina Island:	77%
Revillagigedo Island:	60%
Cleveland Peninsula:	34%

**Data Sources:** 1997 model results from the 1997 TLMP FEIS, Table 3-112.  
2008 model results and WAA land areas are from 2008 TLMP planning record document 0935 (0935.xls).



years ahead will also reach stem exclusion – a “succession debt”<sup>8</sup> that will be paid in a further reduction of deer carrying capacity. Thus, the current deer population and harvest objectives adopted in 2000 are no longer valid, and it would be a mistake to base the adoption of wolf intensive management measures on those objectives.

It is insufficient and reckless, after recognizing that the deer objectives are not realistic, to suggest substituting the 20-year harvest average, as the Assessment does. (Assessment at 7). The habitat is now in poorer condition than during the extent of that 20-year period, and the winter conditions experienced during that period need to be taken into account as well as the expectation that severe winters will occur in the future. The Assessment notes (at 19) that “[r]elative factors in this decline [in deer numbers] have not been determined.” We believe it is crucial that the relative factors be determined, and habitat capability, the effect of recent winters, and the condition of the browse over recent years are key among them.

We believe realistic deer population and harvest objectives for Unit-1A need to be adopted by the Board based on consideration of all the factors involved, and ADF&G needs to reconsider its Assessment on the basis of those new objectives.

***B. Because Gravina Island’s winter browse is limited and already chewed-down, wolf predation is a benefit.***

A deer habitat difficulty on Gravina Island is that there is little summer range on the island, so deer feed on the winter range all year. (Attachment-1, ADF&G letter of 2002 concerning habitat on Gravina Island). In combination with this adverse reality, “[a]n extensive forest fire around 1960 caused loss of winter habitat along the south end of the island” (Assessment at 24) and over the past decade other winter range has been lost to logging on State of Alaska and Alaska Mental Health Trust Lands (Assessment at 24).

Snow depths of over the critical 20” depth for deer are common on Gravina Island (Assessment at 22, 24). “Gravina Island is mostly muskeg scrub forest with very few intact patches of old growth forest. Those few old growth patches have been depleted of deer forage after many years of browse when winter snow forced existing deer into small areas for extended periods.”<sup>9</sup> (Assessment at 22, 25).<sup>10</sup>

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<sup>8</sup> A term coined by ADF&G research biologist Dave Person.

<sup>9</sup> Unit-1A overall also has degraded forage. “[T]he remaining habitat in portions of 1A is not as productive for deer (lack of favored winter browse species), and those areas with good forage show signs of intensive browsing.” (Assessment at 3). “In parts of the unit (i.e., Cleveland Peninsula), past browse utilization appears to have reduced preferred browse species such as *Vaccinium* spp. Other, less palatable and useful browse species (i.e., salal) has become more common in this area. Availability of sufficiently high quality browse in some parts of the unit is thus reduced.” (Assessment at 23).

<sup>10</sup> Contrary to these statements in the Assessment, the document as says, “Habitat capability: Past, present, and anticipated future reductions in important deer winter range (old growth forest) remain a management issue as it affects the ability of the landscape to support deer. On this larger scale, the ability of the habitat in Unit 1A to support deer will decline, and these habitat changes likely play a role in the recent population decline. Nonetheless, we suspect that in the treatment area deer are well below the carrying capacity of the remaining habitat and could increase substantially while remaining within the carrying capacity of this area.” (Assessment at 17). We find that the underlined statement is bald optimism that is contradicted by much of the content of the Assessment, as well as by our further analysis herein of the carrying capacity situation. The bottom line question is, what really is the carrying capacity of Gravina Island (or for that matter Unit-1A)? The Assessment does not confront this key question.

It is apparent that winter habitat for deer is likely the limiting factor for deer numbers on Gravina Island, and not predation or hunting, because of the degraded condition of winter forage. The problem therefore seems to be an unoptimally high number of deer for the amount and quality of habitat available on the island, despite the fact that the deer population is apparently a small number.

Both wolves and deer hunters help keep the deer population in check, but damage to winter forage has become widespread nonetheless. The effort and deer harvest by hunters has been low in recent years (Assessment at 36), so wolves have been the primary agent for keeping the deer population somewhat in check and preventing worse damage to browse vegetation on Gravina Island. Moreover, wolves take deer all year, while hunting seasons are in the fall and winter. Winter range browse that is spared early in the year by predation is browse that is available when needed in winter.

For all of these reasons, the proposed extirpation of wolves on Gravina Island is a bad idea.

***C. The use of Unit-4 in the “Feasibility Assessment” actually contra-indicates wolf IM.***

The Assessment notes that “[e]ven areas like Unit 4, where wolves are absent, experienced severe die-offs during some of these same heavy snow years.” (Assessment at 3). However, the bearing of this isolated remark is left unexplained. Other documentation shows that the deer population on the most heavily affected part of Unit 4 was at carrying capacity at the time the heavy winters began occurring. (Attachment-2, ADF&G statements in Juneau Empire, 16 Sept 2007). The high population affected the condition of winter browse. If Unit 4 had had wolves, we posit that the ensuing lower deer population would have left the winter range in better condition. (See also Attachment-3, ADF&G statements of August 2007). The impact of hard winters in the following years may then have been less catastrophic because the range would have been in better condition. To date, the deer season on northeastern Chichagof Island in Unit 4 is still not back to normal. Moreover, the winter severity and habitat characteristics differ greatly between units in southern Southeast Alaska, as well as across those southerly units from west to east. (Attachment-4, ADF&G statements of October 2007).

In sum, the point in the Assessment regarding Unit 4 and its absence of wolves provides no support for the proposed wolf intensive management on Gravina Island, and if anything it contra-indicates the proposal because, if present, wolves would have moderated the deer population, leaving the winter range in better condition.

***D. The Assessment over-simplified the matter of severe winters.***

The occurrence of severe winters is a limiting factor for deer on and near the mainland of southern Southeast Alaska, including in Unit-1A and on Gravina Island (Attachment 4; Assessment generally). It is the extreme years that matter most and how closely they follow one another, not the long-term average climate statistics on snowfall and temperature.

***i. Recent severe winters were merely mentioned, but their actual severities and their particular effects were not described.***

The Assessment includes many remarks about severe winters and the general effects of winter at several places, for example:

“Winter weather on Gravina Island is a limiting factor for deer survival. Snow depths exceeding 22 inches are common during winter months ...” (Assessment at 22).



“Heavy snow winters, such as we experienced during RY2006-2008 and again in 2011, cause die-offs due to starvation and higher predation rates because animals are in poorer condition. At the same time, in Unit 1A we are faced with habitat alterations related to clear-cut logging that tends to exacerbate the effects of even mild winters.” (Assessment at 3).

“Effects of weather, habitat capability, diseases, and parasites.

- Weather: Severe winter weather is believed to have the greatest impact on Unit1A deer populations, often resulting in high rates of mortality. Severe winters generally occur in cycles and appear to be associated with the Pacific Decadal Oscillation. Historically, two or three bad winters are followed by seven to ten mild winters.” (Assessment at 17).

While we believe these statements are accurate (except we believe there is more to it than just Pacific Decadal Oscillation), the Assessment fails to describe the severity and impacts of winters of the past few decades and particularly the hard winters of the past six years. Where on Gravina (or elsewhere on Unit-1A) did deer survive and where did they perish? How was the browse in deer winter habitat affected over these winters? What were the relative effects of limited winter forage and predation? How much of the predation during these winters was compensatory and how much was additive?

**ii. The likelihood of future severe winters was not accurately presented.**

The Assessment attributes the occurrence of severe winters to cycles of the Pacific Decadal Oscillation (PDO). (Assessment at 16, 22). The PDO has a 20 to 30 year cycle between warm and cold phases, of which we are presently perhaps half way through a cold phase. (NOAA).<sup>11</sup> However, in reporting this the Assessment overlooks other climate factors that interact with the PDO and which operate on different time scales. These include El Niño/Southern Oscillation (ENSO),<sup>12</sup> and the interaction of the Arctic Oscillation (AO) and the Madden-Julian Oscillation (MJO). An interaction of these oscillations, and predominantly the latter three which operate on shorter time scales than the PDO results, as one example, in what is called the Pineapple Express, which brings high moisture to the coasts of the Pacific Northwest and Gulf of Alaska.<sup>13</sup> All it takes is such moisture encountering a body of cold air from the Arctic or interior of the continent to make a lot of snow.

Frontal systems (apart from those of the Pineapple Express) also make snow. Climate models indicate that generally higher moisture and precipitation can be expected along the west coast and Gulf of Alaska as a consequence of warming caused by on-going climate change. (Attachment-5, Salathe 2006). Again, all it takes is moist air encountering a body of cold continental or Arctic air to create extreme snowfall. As also shown by recent very cold or deep snow winters in the US east coast, the UK and Europe, very problematic or record-setting winter conditions should continue to be expected across the upper northern hemisphere despite global warming (Seager et al. 2010; Guan et al. 2010; Boos 2011). Annual snowfall records have been set throughout Alaska, up through the winter of

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<sup>11</sup> NOAA (undated (a)). *Pacific Decadal Oscillation (PDO)*. On the NOAA NW Fisheries Science website, <http://www.nwfsc.noaa.gov/research/divisions/fed/oeip/ca-pdo.cfm>.

<sup>12</sup> NOAA (undated (b)). *El Niño/Southern Oscillation (ENSO)*. NOAA Earth System Research Laboratory website. <http://www.esrl.noaa.gov/psd/enso/>

<sup>13</sup> NOAA (2005). *NOAA catches a culprit behind western storms*. NOAA Magazine, 12 Jan 2005. <http://www.noaaneews.noaa.gov/stories2005/s2367.htm>

2011/2012. (Attachment-6 & -7, Ak Dispatch 2012(a,b)).<sup>14</sup> After snow depth records were set in Southeast Alaska in 2006/2007, the following winter set the second highest records. (Attachment-8, KFSK 2008).<sup>15</sup>

We believe it is likely that global warming effects on the Pacific Ocean, leading to higher atmospheric moisture commonly reaching Southeast Alaska, is causing more snowfall (and higher rainfall in the non-snow months) in contemporary years than the PDO alone can account for. Thus, we challenge the conclusion in the Assessment’s Appendix B section I.B.3 (Assessment at 23) that “[t]here is no evidence that climate change will result in lower deer numbers in this area.” To the contrary, we believe climate change is already playing a role in keeping deer numbers low on Gravina Island and in Unit-1A, and that it will continue to do so even though the population will increase for a time during periods of mild years. We expect these changes will not coincide with the PDO cycle, although it will have an influence on the overall weather at all times.

#### ***F. Ranking the potential for mitigating low deer numbers in Unit-1A and on Gravina Island.***

In subsection titled *Potential to Mitigate Biological Limitations in Considered IM Area* (p.11), the Assessment claims a “moderate” chance of mitigating low deer numbers, with the factors involved being “severe winters” and “reductions in deer carrying capacity resulting from logging,” as well as predation by wolves and bears:

“While the effects of winter weather might be partially mitigated by retaining as much old growth forest as possible to function as deer winter range, the department has little influence over forest management activities occurring on federal lands. While the Forest plan manages wildlife at viable levels, the State manages for sustainable levels (i.e., providing subsistence and recreational harvests). . Although we are not proposing to mitigate the effect of bear predation on the deer population, research being conducted in neighboring Unit 2 indicates that on POW Island black bears prey heavily on deer fawns.” (Assessment at 11).

We believe to the contrary, based on our analysis in these comments, that in fact the mitigation potential is low on Gravina Island. This conclusion is also supported by other content in the Assessment. Appendix B of the Assessment answers the Board of Game’s questions of:

“Has the combination of natural and human-caused disturbance produced an extent and mixture of vegetative seral stages capable of maintaining the present productivity if the population changes due to management treatment at a moderate level of increase? Yes/No. **At a substantial level of increase?** Yes/No” ...

... giving answers of “No” and “No.” (Assessment Appen. B I.B.5 at 23 to 24, *emph. added*). We agree. The several bullet points that that continue the answer clearly illustrate the problem on Gravina Island, as summarized here: (1) important deer habitat has been lost to logging, to additional logging that can be expected to happen, and to a fire of some years ago; (2) logged habitat reaching stem exclusion is a time bomb; (3) productive alpine habitat is under-utilized because the paucity of remaining winter habitat has limited the number of deer; (4) plant species that are important winter forage have been damaged by the number of

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<sup>14</sup> (1) Alaska Dispatch, 2012a. *Snow records near-bursting across Alaska as accumulation mounts*. (Concerning Anchorage, Barrow, Kodiak, Cordova). 5 Mar 2012. [Attachment -5.]

<http://www.alaskadispatch.com/article/snow-records-near-bursting-across-alaska-accumulation-mounts>. (2) 2012b. *Anchorage, Alaska breaks seasonal snowfall record*. 7 Apr 2012. [Attachment-6.] <http://www.alaskadispatch.com/article/anchorage-alaska-breaks-seasonal-snowfall-record>.

<sup>15</sup> KFSK, 2008. *Snowpack 2nd-Highest on Record in Southeast Alaska*. 17 Apr 2008. [Attachment-7.]

deer which was too great for the limited winter forage that was available; and (5) the limited number and size of the remaining patch of deer winter habitat have made deer susceptible to predation.

The problem is, the Assessment has not ranked the importance of these problems, all of which are activated by severe or, now, even mild (Assessment at 3) winters. The over-arching problem is the degradation of habitat from both human and natural causes. It is questionable that predation is even a problem at all since it will help keep the number of deer in check, moderating damage to winter browse and perhaps affording a chance for its eventual recovery.

#### **IV. Facts in the “Feasibility Assessment” Show That Wolf IM Is not Feasible in Unit-1A.**

The Assessment considers only the technical feasibility of eliminating wolves on Gravina Island, but not whether the project is economically feasible. The Assessment provides indicators of the proposed project’s cost, but they are scattered throughout the report. Pulling those cost estimates together, the project will cost more than the range of \$395,000 to \$470,000,<sup>16</sup> with an increase to both ends of that range from providing food, fuel and the use of an ADF&G boat to the contract trappers.

The Assessment is incomplete because it does not estimate how much the deer population and the deer harvest would be increased as a result of the program. However, it seems that those increases will be quite small. If each wolf takes 26 deer over a year (Assessment at 25), elimination of the island’s pack of about 8 wolves could perhaps increase the deer population by 208 deer — if the habitat can support that increase. However, because as the Assessment acknowledges the browse in the winter range is already depleted (Assessment at 22, 24, 25), it seems that this level of population increase cannot be supported by the habitat that remains after the damaging logging that has occurred on Gravina Island.

But for purposes of discussion, using that 208 deer figure the cost of the program would exceed \$2,000 per addition deer in the population and perhaps be as high as \$2,500. In terms of harvested deer, if we use the ratio in the current Unit-1A deer objectives of 700 harvested in a population of 15,000 (or 0.047), a population increase of 208 could result in a harvest increase of only 9 deer. The cost per additional deer that can be expected to be harvested would exceed the range of \$43,900 to \$52,200, each.

Moreover, because Gravina Island is not a closed system – with wolves able to come and go from the island freely – to be effective the wolf control program would need to be continued and costs would have to be on-going for the program to have any continuing effect.

This project is not economically feasible or a wise use of State fiscal or staff resources. The Assessment does not address at all the feasibility of using state funds and staff resources for a project with such exorbitant cost per unit (each deer) of benefit.

#### **V. Missing Information in the “Feasibility Assessment.”**

We note that in Fig. 5 (Gravina Island deer harvest and deer pellet group mean per plot) data points for eight years are missing, including for six of the twelve years since 1999. The missing information is important, yet the Assessment did not disclose its absence. Regardless of whether the data simply doesn’t exist, its absence calls into question some of

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<sup>16</sup> This includes amounts given in the Assessment for: contracts for the trappers; DNA population estimate work; and the \$20,000 (see p.18) in administrative costs.

the sweeping conclusions in the Assessment. Has the harvest of deer on Gravina well been as consistently low since 2000 as shown? The answer to this question is important.

## **VII. Conclusions**

For the reasons we have expressed in the above discussions we recommend that the Board of Game find that the intensive management of wolves on Gravina Island and elsewhere in Unit-1A is unwarranted. Based on scientific and other available information: eliminating wolves may result in even more damage to the remaining deer winter range; the program is likely to be technically ineffective; and the program will be unjustifiably expensive in comparison to the potential for benefit to hunters.

Further, we request that the Board of Game direct ADF&G to recommend revised population and harvest objectives for deer in Unit-1A at the earliest possible date. It is obvious from the content of the department’s Assessment and our comments that the current objectives are outdated and no longer valid for guiding the management of deer and their predators.

Finally, we request the Board of Game to do everything it can within its powers to pressure ADF&G (and more broadly the State) to strongly resist further loss of deer habitat in Unit-1A due to logging. This is in the best long-term interest of good hunting. We are particularly concerned about the State’s “one voice” policy by which comments on timber projects are funneled through the Department of Natural Resources and key information gets filtered out in the process. We ask the board to compare the content of last month’s comments on the Forest Service’s Big Thorne timber sale DEIS by the State of Alaska to those of the US Fish & Wildlife Service and the joint comments by most of the organizations that are submitting these comments to you today. While the State made a few good points, its comments in comparison clearly fall far short. As well shown in our DEIS comments, ADF&G did have much to offer that didn’t make it through the “one voice” process. (See section IV.A of those comments).

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