Photo by Richard Carstensen

THE COSTS OF SENATE BILL 340

➢ A REPORT TO CONGRESS

A CLEARCUT LOSS

Alaska contains the majority of America's remaining old-growth forest. The most productive sites have trees more than 8 centuries old, 200 feet tall, and 30 feet around at the base.

An Alaska Native Corporation is seeking authorization from Congress to change the terms of a 40-year-old settlement to allow them to select these ancient trees for clearcutting.

Authored by experts in forest ecology and environmental policy, this report advises Congress on the ecological costs of this legislation in Alaska's Tongass National Forest.

EXECUTIVE SUMMARY

Senate Bill 340 has been introduced in the 113th Congress.[1] This proposed legislation would rewrite basic provisions of the nearly 40 year old Alaska Native Claims Settlement Act (ANCSA) and authorize the Sealaska Corporation to make new alternative selections of public lands from within the Tongass National Forest in Alaska for logging and development. This report[2] examines the ecological costs of this proposed legislation, asking two questions: (1) How do ecological costs compare under current law (ANCSA) and the proposed law (S 340); and (2) Are the conservation lands added under S 340 sufficient to balance the ecological loss from the proposed new timber selection lands?

Our analysis shows that under the proposed new law, timber selections would be strongly skewed towards ecologically rare and economically valuable large-tree old growth stands. Large old-growth stands in this size class make up just 3% of the Tongass Forest as a whole. By contrast, they are two times greater (7%) in Sealaska's land selections under ANCSA, and *ten times* greater (30%) in the proposed new selections under S 340.

The wildlife conservation value (based on the value of the land to multiple species) is over 2.5 times greater on the land the corporation proposes to select, than on its currently entitled land. Although S 340 would confer a conservation designation on 152,000 National Forest acres, the incremental benefit of these designations is negligible because: (a) 85% of those acres are already protected from logging by existing designation, and (b) the net increases in protected lands are largely in non-forest and unproductive forest habitats, which have lesser value and are not at risk.

After accounting for the "conservation land" additions, S 340 would still result in a net loss of productive old growth, large-tree old-growth, and biological hotspots (i.e., core areas of ecological value). In addition, the higher-value roadless areas and old-growth reserves would be lost. If enacted, this legislation would repeat a destructive pattern of targeting and exploiting the rarest and highest value timber lands on the Tongass while conserving lower grade and less productive habitats. Because Sealaska Corporation has already identified and filed its final land entitlement selection priorities under existing law, this costly legislation is not necessary and should be rejected.

[1] The full title of the bill is *The Southeast* Alaska *Native Land Entitlement Finalization and Jobs Protection Act,* commonly referred to as the "Sealaska lands bill."

[2] Suggested Citation: Audubon Alaska. 2013. The Cost of Senate Bill 340—A report to Congress. Audubon Alaska, Anchorage, AK. 11 pp. Authors in alphabetical order are Matthew Kirchhoff, Eric Myers, John Schoen, Melanie Smith, and Nathan Walker.

Background.—The Sealaska Corporation is one of 12 regional corporations created by the 1971 Alaska Native Land Claims Settlement Act (ANCSA)—the largest Native claims settlement in US history.[3] The regional and village Native Corporations in Alaska that were established by ANCSA received land (44 million acres) and money (approximately 1 billion dollars) to resolve all Native claims in Alaska.

Consistent with provisions of ANCSA, and the 2004 Alaska Land Transfer Acceleration Act[4], Sealaska Corporation made its "final" and "irrevocable" land selections in 2008. These selections were within areas that Sealaska itself helped to identify and supported in testimony to Congress in 1975.[5] Instead of accepting conveyance of those selections, however, Sealaska directed the Bureau of Land Management (BLM) to *not* convey its final entitlement. Instead of taking title to its selected lands, Sealaska has pursued an authorization from Congress to obtain far more lucrative public lands in the Tongass, primarily for logging and other forms of development. S 340 and HR 780 are the most recent versions of legislative proposals that have been introduced to Congress seeking authority to rewrite the terms of Sealaska's ANCSA land selections.

The new public land that Sealaska seeks is far more valuable economically than the lands in the corporation's ANCSA entitlement. The new land contains more and higher-quality timber, as well as valuable infrastructure (roads, bridges, log transfer facilities) paid for with public funds. Internal Forest Service correspondence obtained under the Freedom of Information Act indicates that the newly proposed Sealaska land selections could be five times more valuable than the corporation's existing land entitlement.[6] While Sealaska is unquestionably deserving of its legal land entitlement as provided for under existing law (ANCSA), the pending legislation would greatly expand the award to Sealaska Corporation, and set a precedent for similar claims by other Corporations.

This report focuses on the ecological or conservation tradeoffs of the proposed legislation. Sealaska Corporation has suggested that the proposed legislation is in the public interest because logging outside the ANCSA-approved selection areas would: (1) select fewer acres of old growth forest; (2)

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[3] Jones, R.S. 1981. Alaska Native Claims Settlement Act of 1971 (Public Law 92-203) History and Analysis Together with Subsequent Amendments. http://www.alaskool.org/projects/ancsa/reports/rsjones1981/ancsa_history71.htm

[4] Section 403 of the act requires that any Native Corporation that has not received its full entitlement or entered into a voluntary, negotiated settlement of final entitlement shall submit the final, irrevocable priorities of the Native Corporation (emphasis added). http://www.gpo.gov/fdsys/pkg/PLAW-108publ452/pdf/PLAW-108publ452.pdf.

[5] Testimony of John Borbridge, President, Sealaska Corporation: Hearing on S. 131 et al. before the Senate Committee on Interior and Insular Affairs, 94th Cong. 184-85 (1975). "We would greatly prefer to satisfy our 14(h)(8) rights out of lands in the areas that were withdrawn by section 16(a) for the 10 villages in the southeastern region. Basically we are desirous of selecting lands for timber values… areas could be combined with lands conveyed to the Village corporations to form better management and economic units." As reported by Alaska Congressman Don Young, the selection proposal endorsed by Sealaska "embodies a compromise negotiated and supported by Sealaska, the State of Alaska, Native villages in the region and various environmental groups." (Congressional Record, Dec. 16, 1975). Sealaska Corporation has received more than 290,000 acres of land from the selection areas, with approximately 63,605 acres remaining, based on estimates from the Bureau of Land Management.

[6] Internal United States Forest Service comparison of values for Sealaska legislation proposed to the 112th Congress (S 730). http://tongasslowdown.org/TL/docs/3_Comparison%20of%20land%20values%20sealaska%20bil.pdf

avoid logging in environmentally sensitive areas, including roadless areas, and old-growth reserves; and (3) designate more than 150,000 acres of land for conservation elsewhere on the Tongass National Forest.[7] This study critically examines the proposed legislation in those terms.

Methods.—The comparison we draw is between the priority lands Sealaska has identified for selection under existing law within the ANCSA-approved selection areas, versus the new lands they seek for timber development under S 340. Under the Alaska Lands Transfer Acceleration Act, Sealaska identified a pool of about 139,000 priority acres within the ANCSA selection areas. From this, about half would ultimately be conveyed in satisfaction of Sealaska's remaining land entitlement of approximately 70,000 acres. Because Sealaska unilaterally stopped the conveyance process, however, the corporation's final selection has not yet been finalized. For our purposes, we assume the nature of the 70,000 acres in the final conveyance would be similar in character to the 139,000 acres of priority lands Sealaska selected.

Old Growth Forest.—The structural and functional attributes of old growth vary widely across the habitat type. Within old-growth forest classified as productive (of commercial quality), the timber yield ranges from 8,000 board feet per acre to over 200,000 board feet per acre. Dominant trees in smaller size-density classes may average 10 inches in diameter and 50 feet tall; whereas trees in the largest size-density class can exceed 10 feet in diameter and be more than 200 feet tall. The Forest Service has replaced old volume-class definitions on the Tongass National Forest with new classifications based on mean tree size and stem density.[8] For this report, we utilized the Forest Service's data layers on tree size and density.[9]

The extremely large trees (cover photo), have been heavily logged, and are scarce today. Small remnants of the biggest trees still exist along some salmon streams, or as inclusions within the large-tree habitat type (size-density class 6/7).[10] Especially within intensively managed watersheds, remnant patches of productive large-tree old-growth are very important for maintaining wildlife populations and biodiversity.[11]

A spatial analysis reveals that Sealaska's existing ANCSA selections are relatively timber-rich lands compared to the Tongass overall, with 78% less non-forest habitat and nearly double the amount of large-tree old growth compared to the Tongass National Forest (Table 1). Sealaska's proposed new

[7] Sealaska Leadership Speaks Out For Land Legislation http://www.sealaska.com/docs/IO/1958/leadership-speaks.pdf

[8] Caouette, J. P., and DeGayner, E.J. 2005. Predictive mapping for tree sizes and densities in Southeast Alaska. Journal of Landscape and Urban Planning Vol. 72/1-3 pp 49–63. http://www.fs.fed.us/pnw/pubs/journals/pnw_2005_caouette001.pdf

[9] For convenience we are combining size-density classes 4H, 4N, and 4S, and classes 5H, 5N, and 5S, into 'size-density classes 4 and 5,' to simplify the tables and figures reported here.

[10] 1999 Landmark Tree Project Field report. http://www.seawead.org/images_documents/documents/landmarktrees/99.pdf

[11] Houde, I., S. Leech, F.L. Bunnell, T. Spribille, and C. Björk, S. 2007. Old forest remnants contribute to sustaining biodiversity: The case of the Albert River valley. BC *Journal of Ecosystems and Management* 8(3):43–52. http://www/geobotanik.org/spribille/documente/albert_river.pdf

land selections under S 340 are vastly richer still. Under S 340, the corporation would obtain 32% more productive old-growth (size-density classes 4 – 7), and almost five times more large-tree old growth (size-density class 6/7) than under existing ANCSA law.

***Table 1**. Composition of Tongass National Forests, ANCSA Priority selections, and Senate Bill 340 selections. Large-tree forest type is highlighted.*

Forest Type	Tongass NF	ANCSA Priority Selections	S 340 Selections
Non-Forest	40.8%	9.1%	1.7%
Non-Productive Forest	25.9%	44.1%	9.1%
Old Growth Size-Density Class 4	15.5%	21.3%	10.8%
Old Growth Size-Density Class 5	11.8%	15.5%	16.1%
Old-Growth Size-Density Class 6/7	3.4%	6.6%	30.1%
Young Growth	2.7%	3.5%	32.2%

Habitat Value of Large-tree Old Growth.—Large-tree stands are especially important as habitat for fish and wildlife. For example, during periods of deep snow, Sitka-black-tailed deer move into large-tree stands[12] where the massive canopy structure intercepts and holds large amounts of snow, providing for winter foraging opportunities below the canopy.[13] Trees that grow along streams, particularly larger trees, provide an important source of long-lasting woody debris that provides stream structure and enhances habitat for salmon.[14] The heavy exploitation of rare large-tree stands on the Tongass has long been a concern of wildlife biologists.[15] Those concerns were affirmed by a congressionally appointed blue-ribbon panel of scientific peer reviewers [16] and reflected in a national position statement on management of old-growth forests on the Pacific coast of North America.[17] In the 1990 Tongass Timber Reform Act, Congress acted to ban the disproportionate logging of large-tree stands of

[12] Schoen, J.W, and M.D. Kirchhoff. 1990. Seasonal habitat use by Sitka black-tailed deer on Admiralty Island, Alaska. *Journal of Wildlife Management* 54:371-378.

[13] Kirchhoff, M.D. and J.W. Schoen 1987.Forest Cover and snow: implications for wildlife in Southeast Alaska. *Journal of Wildlife Management* 51:28-33.

[14] Murphy, M. L. and K V. Koski. 1989. Input and depletion of large woody debris in Alaska streams and implications for streamside management. *North American Journal of Fisheries Management* 9:427-436.

[15] Wildlife Society News, fall 2012. http://news.wildlife.org/twp/2012-fall/tws-helps-save-the-tongass/

[16] Joint statement of members of the peer review committee concerning the inadequacy of conservation measures for vertebrate species in the Tongass National Forest. Land Management Plan of Record. http://tongass-fpadjust.net/Documents/Appeals/NRDC/TLMP%20appeal%20Attachment%20C%20-%20NRDC.pdf

[17] Final The Wildlife Society Position Statement Conservation and Management of Old-growth Forest on the Pacific Coast of North America. http://joomla.wildlife.org/documents/positionstatements/38-final_old_growth2207.pdf

old growth (known as high-grading).[18] Still, high-grading continues to be an on-going concern on the Forest today.[19]

When one examines the distribution of acres by tree size in the new lands being sought by Sealaska under S 340, the Corporation is clearly seeking to move their selections into the highest-value stands on the forest (Figure 1). In addition to high-grading rare big trees that grow on well-drained soil types, including karst, the Corporation is also targeting ancient yellow and western red cedars.[20] Yellow cedar, a species in serious decline across the region[21] is especially valuable in today's markets. In 2005, the stumpage value for yellow cedar was five times higher than the next most valuable species.[22]

[18] Contractual Modification Requirements of the Tongass Timber Reform Act. United States General Accounting Office. March 1991. http://www.gao.gov/assets/220/213886.pdf

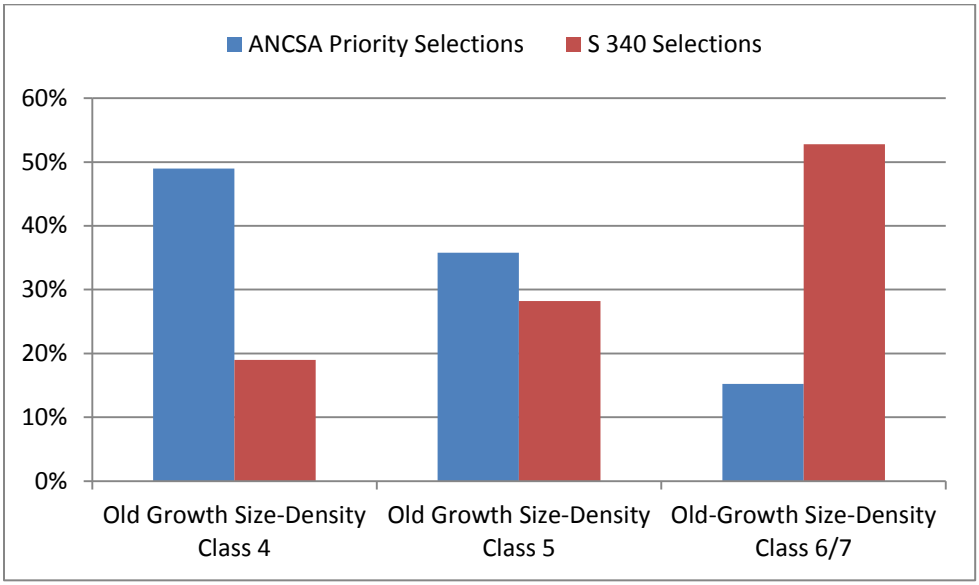
[19] Albert, D.M. and J.W. Schoen. *In press*. Use of historical logging patterns to identify disproportionately logged ecosystems within temperate rainforests of Southeast Alaska, *Conservation Biology* xx:xxx.

[20] Carstensen, R. 2013. Sealaska Lands Bill S. 340. Global treasures in the karst & cedar shell game. http://gsacc.net/wp-content/uploads/2013/05/GSACC-S.340-SEAWEAD-Appraisal.pdf

[21] Hennon, P.E., D.V. D'Amore, P.G. Schaberg, D.T. Wittwer, and C.S. Shanley. 2012. Shifting Climate, Altered Niche, and a Dynamic Conservation Strategy for Yellow-Cedar in the North Pacific Coastal Rainforest. *BioScience*, Vol. 62, pp. 147-158 http://ine.uaf.edu/accap/documents/Yellow-cedar_BioScience_Feb_2012.pdf

[22] Beier, C. 2011. Factors influencing adaptive capacity in the reorganization of forest management in Alaska.*Ecology and Society* **16**(1): 40. [online] http://www.ecologyandsociety.org/vol16/iss1/art40/

***Figure 1**. Tree size-class distribution of old-growth forest is shown with Sealaska's existing ANCSA selections (blue) versus proposed S 340 selections (red). The graph reflects productive old-growth acres, and follows habitat classifications recognized by the US Forest Service (Small trees in class 4 to large trees in class 6/7).*



Conservation Value.—One way of quantifying the conservation value of the acres proposed under ANCSA versus S 340 is use of a conservation score[23] that reflects a broad spectrum of wildlife and habitat resource values. The Tongass conservation assessment published by The Nature Conservancy and Audubon Alaska provides an index value for every acre of land based on its modeled value to black bears, brown bears, deer, murrelets, five species of salmon, and important habitat types.[24] All else being equal, watersheds with roads receive lower scores than watersheds without roads. This quantitative analysis is used to evaluate the relative conservation value of each option (existing law under ANCSA versus S 340) based on conservation scores for each landscape (Figures 2 and 3). We find the mean conservation value of lands proposed for logging in S 340 is 2.5 times greater than the mean conservation value of Sealaska's existing ANCSA priority land selections (mean scores of 29.6 and 11.4 respectively). From an ecological value and conservation standpoint, it would be far more desirable for Sealaska to log within its already-selected ANCSA priority lands than within the new proposed S 340 selections.

[23] Ball, I.R., H.P. Possingham, and M. Watts. 2009. Marxan and relatives: Software for spatial conservation prioritization. Chapter 14: Pages 185-195 in Spatial conservation prioritisation: Quantitative methods and computational tools. Eds Moilanen, A., K.A. Wilson, and H.P. Possingham. Oxford University Press, Oxford, UK.

[24] Albert, D., and J. Schoen. 2007a. A conservation assessment for the coastal forests and mountains ecoregion of southeastern Alaska and the Tongass National Forest. In *The coastal forests and mountains ecoregion of southeastern Alaska and the Tongass National Forest: A conservation assessment and resource synthesis*, edited by J. Schoen and E. Dovichin, chapter 2. Anchorage, AK: Audubon Alaska and The Nature Conservancy. http://www.conserveonline.org/workspaces/akcfm.

Figure 2. *Distribution of conservation scores under the Sealaska's ANCSA priority selections (left pie) and the proposed S 340 new selections (right pie). Darker green colors indicate lands with higher conservation values. Over half of the timber land proposed in S 340 falls into the top two conservation categories. In contrast, only 10% of the land under current ANCSA selections falls in those categories.*

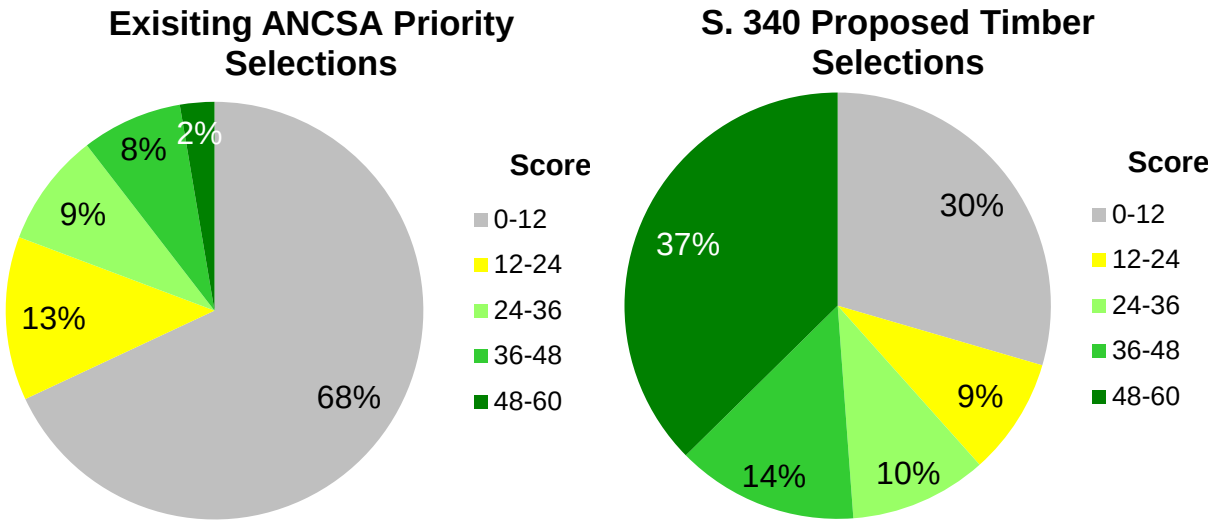
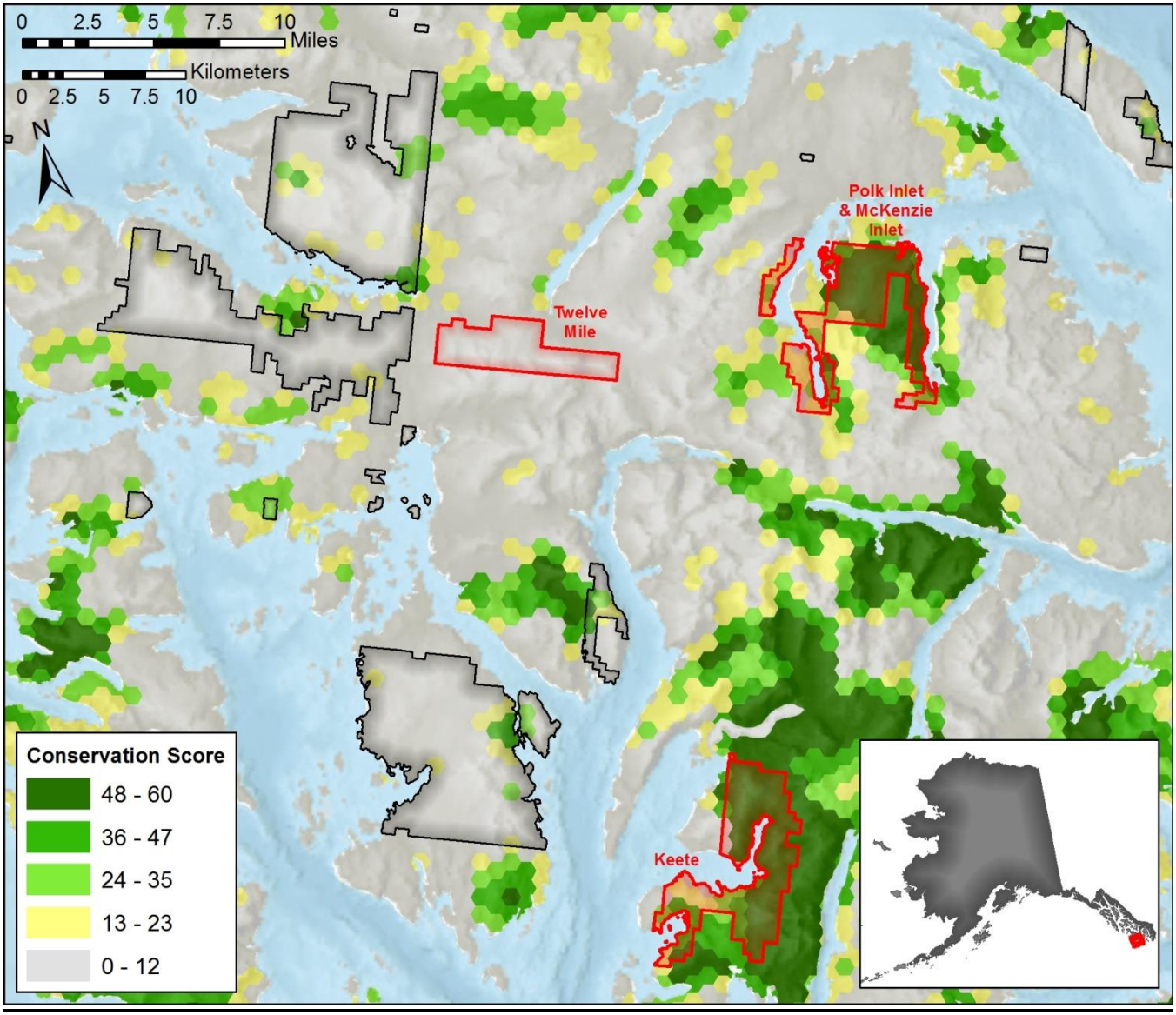


Figure 3. *Sealaska's ANCSA priority selections (black boundaries) and the proposed S 340 new selections (red boundaries), overlaying base map showing biological values (green) on Prince of Wales Island. The Twelve Mile selection is primarily second growth.*

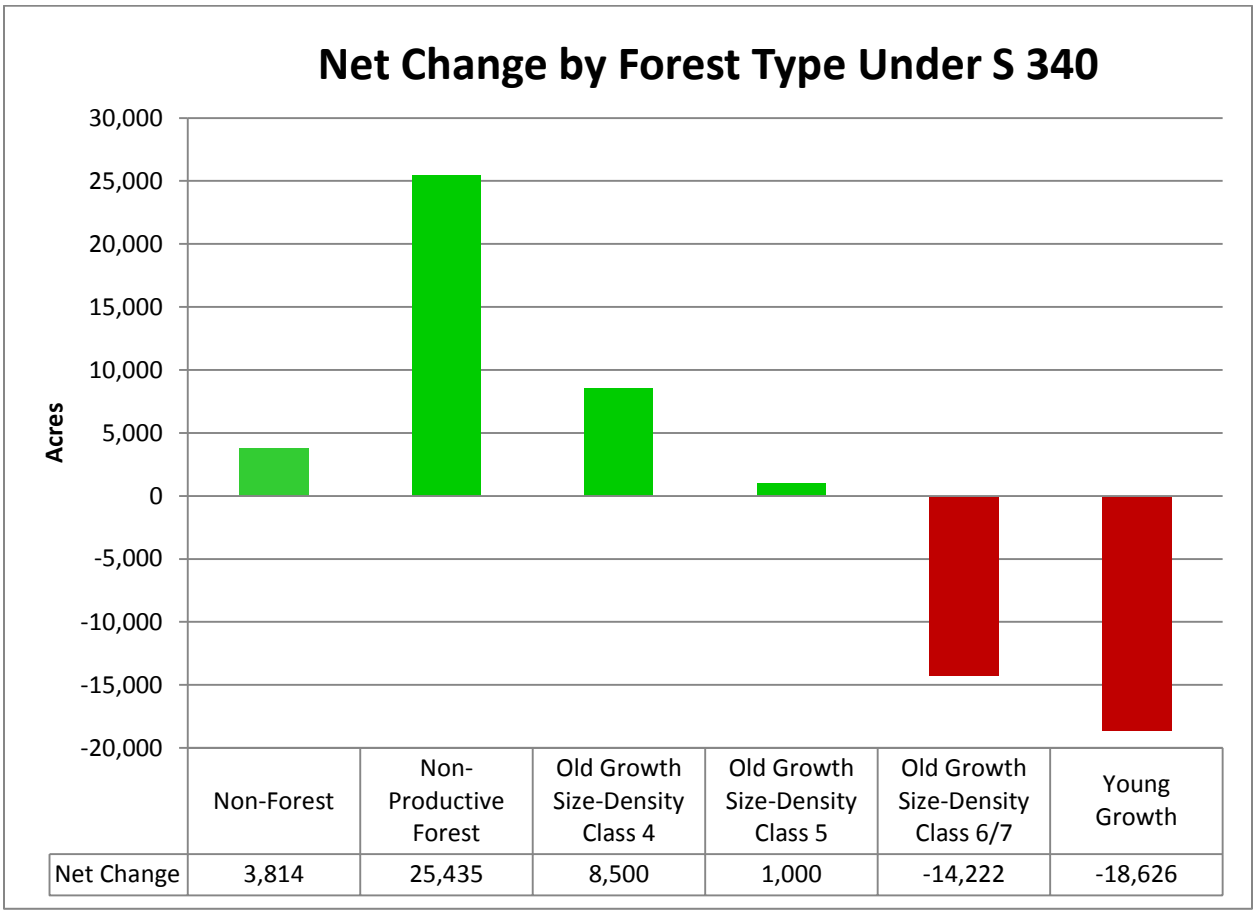


<u>*Conservation Additions under S 340*</u>.— The additional feature of S 340 that affects any assessment of conservation value is the assignment of 152,000 acres of "conservation lands" in the bill. These conservation additions were intended to mitigate concerns over the loss of public lands and clearcutting of valuable old growth on the proposed S 340 timber selections. Because most of these conservation acres are already protected from logging under the current roadless rule[25], few of the conservation additions result in conservation gains. Of the 152,000 acres identified in S 340 as

[25] The 2001 Roadless Area Conservation Rule bans logging in roadless areas on all National Forests. The Tongass was exempted from this rule in 2003, a decision which was challenged in court. In 2011, the federal District Court vacated this exemption. http://www.eenews.net/assets/2011/05/12/document_gw_03.pdf

conservation lands, only 22,200 acres are not already protected under the 2001 roadless rule. *Net* conservation additions from S 340 are the new conservation lands added under s 340 (22,000 ac) plus the roadless acres within ANCSA priority selections that would be foregone (saved) if 340 passes (58,000 ac). When we look at the makeup of those net conservation gains, they are primarily unproductive lands. The forest types which would suffer net losses are the most productive forest lands (Figure 4).

Figure 4. *Net gain (green) and loss (red) of acres by forest type under S 340, accounting for conservation land additions and timber land losses.*

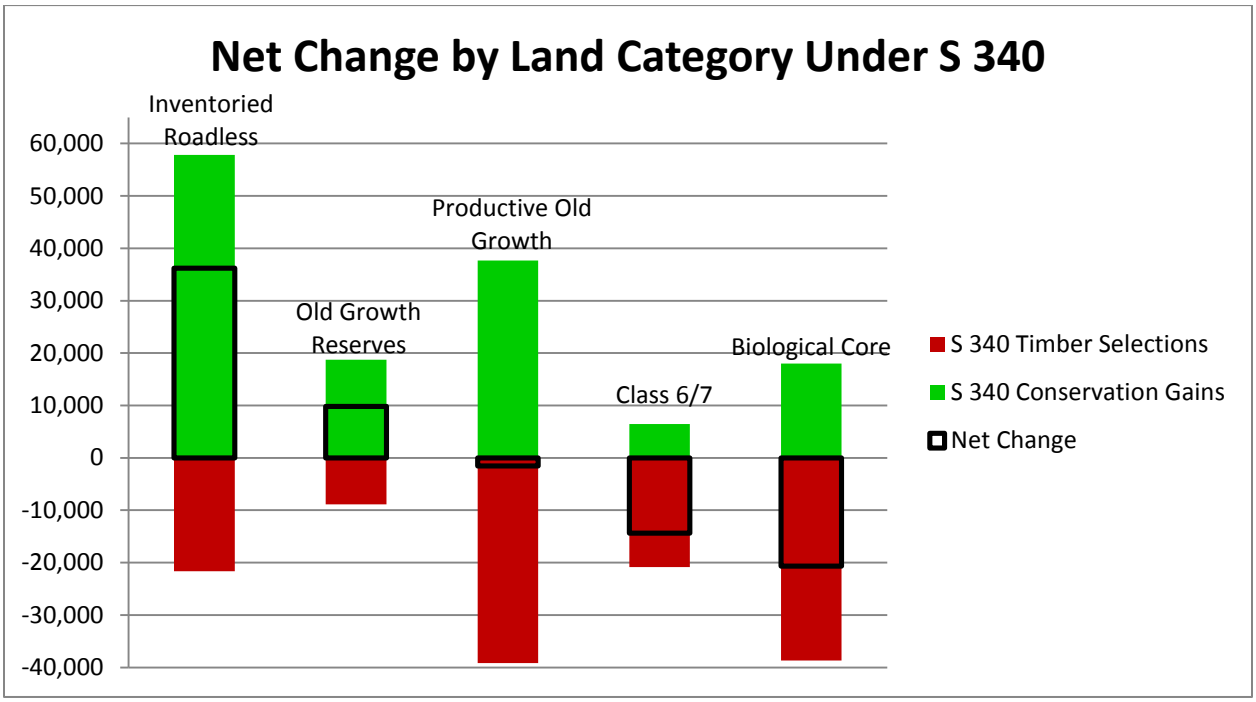


	Non-Forest	Non-Productive Forest	Old Growth Size-Density Class 4	Old Growth Size-Density Class 5	Old Growth Size-Density Class 6/7	Young Growth
Net Change	3,814	25,435	8,500	1,000	-14,222	-18,626

Biological Core Areas, Old-growth Reserves, and Roadless.—The conservation models described previously identify biological core areas across the Tongass forest in a way that maximizes biological values on the smallest possible footprint, or land area (Figure 3).[26] When we look at the effect of S 340 on these important biological core areas, there is a net loss of 20,700 acres (Figure 5).

[26] Albert, D., and J. Schoen. 2007b. A comparison of relative biological value, habitat vulnerability, and cumulative ecological risk among biogeographic provinces in southeastern Alaska. In *The coastal forests and mountains ecoregion of southeastern Alaska and the Tongass National Forest: A conservation assessment and resource synthesis*, edited by J. Schoen and E. Dovichin, chapter 3. Anchorage, AK: Audubon Alaska and The Nature Conservancy. http://www.conserveonline.org/workspaces/akcfm.

Figure 5. *The gain (green) and loss (red) of land by conservation category under S 340, accounting for conservation land additions and timber land losses; the black line indicates the net change.*



S 340 provides acreage gains in Inventoried Roadless Areas (+ 36,180 ac) and old growth reserves (+ 9,841 ac), while causing a loss in productive old growth (-1,524 ac), large tree old growth (-14,329 ac), and biological core (-20,656 ac) (Figure 5).

The roadless and old growth reserve acreage that would be conserved is mostly low quality. Much of the roadless land is roadless because it does not support commercial-quality forest. Even the designation "old growth reserve" does not necessarily connote important old growth. For example, less than half of the OGR acreage within the ANCSA priority areas is productive old growth, and only 3% is large-tree old growth (SD 6/7). By comparison, 83% of the Old-Growth reserves in S 340 selections is productive old-growth, and 46% is large-tree old growth. From a wildlife standpoint, the quality of the old-growth reserves on S 340 land is much greater than on ANCSA land. Loss of the S 340 old growth reserves would have disproportionate impact on old-growth dependent species, including the Alexander Archipelago wolf, the Queen Charlotte goshawk, and the Prince of Wales flying squirrel. These three species have previously been petitioned for listing in Southeast Alaska under the Endangered Species Act.[27]

[27] Petitions to list:
Alexander Archipelago wolf
http://www.biologicaldiversity.org/species/mammals/Alexander_Archipelago_wolf/pdfs/AA_Wolf_ESA_Petition_10-Aug-

Conclusion.—The proposed legislation would result in the loss of *more* acres of productive old-growth forest, *more* acres of large-tree old-growth, *more valuable* wildlife habitat, and *more valuable* old growth reserves than this corporation is entitled to under the Alaska Native Claims Settlement Act. The Sealaska lands legislation provides a classic example of exploiting the most economically and ecologically valuable lands, while saving lands of lower value. It is "high-grading" for resource extraction and "low-grading" for conservation. The costs to wildlife and the environment would be high, and in this case, the costs are borne by the American public. Congress can act on behalf of that public by holding Sealaska Corporation to the settlement it received under current law. S 340 is special interest legislation that is both costly and harmful, and should continue to be rejected by Congress.

2011.pdf,
Queen Charlotte goshawk:
http://www.biologicaldiversity.org/species/birds/Queen_Charlotte_goshawk/pdfs/qs_petition.pdf
Prince of Wales flying squirrel:
http://wg.convio.net/site/DocServer/Prince_of_Wales_flying_squirrel_petition.pdf?docID=3642&AddInterest=1103