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**COMMENTS ON PROPOSED AMENDMENTS TO LAND USE OBJECTIVE, in the
CENTRAL AND NORTH COAST ORDER for Ecological Based Management**

Attn. Sally Prowse

Integrated Land Management Bureau

Ministry of Agriculture and Lands, West Coast Service Centre

Suite 142, 2080 Lacieux Road, Nanaimo, BC.

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Email: Sally.Prowse@gov.bc.ca

Dear Ms Prowse:

Thank you for the opportunity to comment on the Central and North Coast Order for Ecosystem-based Management (EBM.) Our review was guided by:

- The EBM objective of maintaining ecological integrity, which is being maintained when adverse effects to ecological values and processes are minimal or unlikely to occur.
- Precautionary principle for EBM. Reference: Draft 12 for Framework for Ecosystem Based Management (EBM) is a product of the Gitga'at – Kitsoo/Xaixais Pilot Project. June 22, 2002. Particularly accordance with this principle, a precautionary approach to implementing EBM will involve: a) consideration of the needs of future generations and **avoidance of changes that are not potentially reversible**; [Emphasis added].
- The **Precautionary Principle of Biodiversity** (Anon 2005).

**VALHALLA WILDERNESS SOCIETY
CONTRIBUTIONS TO COASTAL CONSERVATION**

The Valhalla Wilderness Society (VWS) has been active in conservation on the BC Coast for over 20 years, having initiated work on the Spirit Bear Conservancy Project and the Khutzeymateen Grizzly Bear Sanctuary. VWS researched and produced 13 different reports for

these projects, ranging from habitat surveys and GIS models on the central coast for salmon biomass, bear feeding and denning habitat (both species), wolf-deer habitats, estuary/salt marsh areas and ecosystem representation. We also sponsored Culturally Modified Trees surveys, a study of Carabid (forest) beetles to represent biodiversity, and an Ecosystem Analysis by forester Herb Hammond. We also looked at impacts or road disturbances on bears in several areas of the central coast by modeling a GIS overlay of roads and clearcuts with important bear habitats.

This information was used, not only to design and support new protection areas, but also to provide science-based input with presentations to the central and north coast planning tables. In addition VWS provided input to the EBM guidelines starting with the Kitasoo-Gitga'at Planning Information Team in 1992, and participated in working sessions on species mapping for the Coastal Information Team (CIT) and ultimately EBM.

CONTEXT OF THREATS TO COASTAL ECOSYSTEMS

A review of this EBM Order must be made in context with the current state of the coastal ecosystems, which has changed radically since the EBM process began seven years ago, and with the huge pressures and leverage that are falling upon coastal ecosystems. On one hand, we have a very serious collapse of the salmon population that is starving species such as orcas and grizzly bears, and we have near disastrous levels of carbon build-up in the atmosphere, requiring our planet's most strenuous efforts to absorb and store carbon, of which our old-growth coastal temperate rainforest stores the highest amounts of any terrestrial ecosystem; on the other hand, we have high market prices for cedar and shipments of raw logs to China that will almost certainly increase rapidly powerful economic incentives for logging-as-usual that has so wrecked BC's southern coast. Essentially, the government's attempts to swing trade deals to ship large quantities of raw logs to China represent the *other* plan for BC's mid- and north-coast regions — one that could potentially ravage a vast area of coastal temperate rainforest and contribute significantly to climate change escalation at a time when the province is claiming to be a global leader in reducing climate warming.

GENERAL ASSESSMENT OF PROTECTION PROVIDED BY THE ORDER

VWS is deeply concerned that this order will not adequately protect salmon, spirit bears, most black bear denning sites or grizzly bears. We are extremely disappointed that in the Orders and Objectives, after much ado, there is not any mention of alternate "lighter touch" silvicultural systems that mimic natural disturbances patterns of the BC coastal rainforest. Instead, the status quo of extensive road building and clearcutting will be the continued mode for timber extraction in the EBM model. Clearcutting and road building do not mimic in any way natural disturbance patterns.

While there are various guidelines for retention of different species and old growth, (some of which represent an improvement over previous logging guidelines), we do not believe they will cause only minimal or no adverse effects to ecological integrity. After careful review we believe there will be major adverse effects on many species. Overall this EBM agreement is falsely portrayed as "low risk;" many of the prescriptions in the guidelines are high risk to focal species. For example, loss of critical black bear and grizzly bear old growth habitat for winter dens will continue under the proposed schedules and ultimately cause irreversible ecological losses and harm to both species.

Following are general comments on the deficiencies of the EBM Order:

- Nowhere do we see any evidence of actual ecosystem-based planning having gone on in the last seven years that EBM has been under discussion. Sensitive areas to be protected have not been spatially identified on maps before the logging begins, and removed from the allowable annual cut. VWS is shocked that after seven years of EBM talks between government, First Nations and the Rainforest Solutions Project, there are no maps showing the actual proposed forest retention zones for public review other than for the grizzly bear habitat.
- Nor does the EBM Order mention any reduction of the AAC. Without a drastic reduction of the AAC, logging pressures will quickly mow down what little improvements there are in the EBM Order. From its field experience and its mapping of the Great Bear Rainforest, Valhalla Wilderness Society believes that there are vast areas that will be logged on the coast, including ecologically sensitive areas that should have been included under the 40+ recommended for protection by the blue-ribbon Coastal Information Team (instead less than 30% was protected).
- There is nothing in this Order that constrains the building of logging roads. Indeed, there are provisions for logging roads to cross leave strips along streams if necessary. A logging company may obtain a watershed assessment if it wants to clearcut a watershed beyond what the EBM objectives allow, but it does not have to obtain an assessment on the terrain stability of slopes and slope hydrology in order to build a road. It can apparently build a road anywhere it wants. In terms of hydrology and slope stability, this Order is a logging company free-for-all.
- The only 100% retention sites mentioned are class 1 grizzly bear habitat. However, there are many other kinds of sensitive sites that should not be logged at all, such as steep slopes above fish streams. The Order are largely concerned as to how to and where log, not to log large areas such as an intact valleys or High Conservation Value Old Forests with critical habitats for black bear winter dens, marbled murrelet nesting sites, tailed frogs, Sitka deer winter range and many other old-growth dependent species. Most of these will be logged under the current orders.
- The preamble states that 70% old forest retention will be one of the indicators of logging performance. However, the Preamble is not part of the Order, and there is nothing in the Order itself that requires 70% old forest retention except in riparian strips. Overall, a review of the objectives indicates there would be far less forest retained. For instance, objective 18 for Kermode bears would allow a maximum of 30% early seral, but also a maximum of 40% mid-seral. That means 70% of a Spirit Bear area could be logged.
- With respect to claims of **maintaining high levels of old forest representation (i.e. 70% of the Range of Natural Variation – RONV)**, while we very much appreciate this is an improvement over the earlier target, it still is fraught with high ecological risk. For one thing, *approximately 1/2 of the old forests on the BC coast have already been clearcut*. Secondly as we will point out further, old growth representation in the Timber Harvesting Land Base (THLB) of a Landscape Unit, which also includes within its boundaries protected areas, can be made up largely from the protected area old-growth. This will allow especially intensive logging to go on around protected areas, whereas one of the roles of forest retention should be to provide a buffer zone between protected areas and logging. Thirdly, a lot of area in the ecologically rich valley bottoms and lower slopes of watersheds and islands can still be logged out with minimal protection, as the

old growth retention can be comprised of forests higher up the mountains outside of the operability lines.

- Provisions allowing them to be waived fatally flaw almost all the EBM objectives. In essence, there seems to be very little that is legally binding in the Order. The Valhalla Wilderness Society appreciates that the objectives for class one grizzly bear habitat do not contain such provisions. However, the objectives for important fisheries watersheds, high value fish habitat, aquatic habitat that is not high value for fish, forested swamps, upland streams, active fluvial units, landscape level biodiversity, and red- and blue-listed species all have contained within them allowances that make them non-binding; and that will directly impact grizzly and black bears by impacting fish and other parts of the ecosystem. The sections that grant waivers basically establish a routine of consulting First Nations, drawing up an “adaptive management plan,” i.e., a plan to violate the objective, and sometimes providing professional studies showing that the plan will not harm the values the objective was meant to protect. But logging companies have, for decades, been able to obtain professional assessments that have approved atrocious road building and logging practices. *The EBM rules were supposed to remedy such problems by imposing constraints that had to be followed throughout the land use plan area.*
- A lot of the cedar now being logged by helicopters is way up on the steep mountains where the bears den. Many den sites are in very old forest on well-drained sites wanted for logging. The definition of “critical black bear habitat” and the mention of critical 1 grizzly habitat omit such sites. We hope to see this part of the denning habitat restored in the definition.
- In terms of the objectives, we find curious omissions. There is nothing on objectives for climate change and nothing on objectives for a whole host of important identified focal species such as the marbled murrelets, tailed frog, north goshawk and others.
- Consistent with the failure to provide for proper planning, a forest stewardship plan filed by a company holding a Community Forest Agreement does not have to specify results or strategies for meeting the objectives of the Order.
- In fact, the Order has left all planning activities to be carried out by the logging companies as they log, and there are no provisions requiring a plan to be filed. We assume that the Forest and Range Practices Act will require companies without a Community Forest Agreement to file a Forest Stewardship Plan; however, these plans do not require a logging company to show the cutblocks its plans in a public review. *There are NO provisions for public review anywhere in this Order.*
- The overseeing bodies are the logging companies under the Forest and Range Practices Act, which is where all of this EBM ends up. There is no established, independent OVERSEEING body to monitor and review EBM. If two or more companies operate in a landscape unit, there are no provisions for coordination of reserves, etc.
- We are pleased to learn recently that the coastal black bear and Sitka deer have now been added to the focal species review for EBM. However, these have not been added to the list of proposed objective amendments we are being asked to comment on. We hope they will and that adequate protective Schedules will be prescribed.

DETAILED COMMENTS ON THE RECENT ORDERS AND AMENDMENTS

PREAMBLE

The Preamble clearly states that the EBM plan must result in higher job levels on the coast, or it could be amended. This is not really ecosystem-based management. Given the many weak or non-existent elements of the ecosystem protection, it is clearly economic-based management.

DEFINITIONS

Old forest as 250 years or older. The definition should be 140+ years, or the Order will result in extensive logging of critical old-growth habitat in its earlier aging state.

Critical Grizzly Bear Habitat Class 1 and 2 needs to be listed and defined. They are not listed in Schedule 2, only the map. Grizzly bear denning habitat needs to also be added as critical habitat for similar reasons as cited below for Critical Black Bear Habitat. Grizzly bears use very old trees for winter dens for 1/2 of each year and this is really the most critical of grizzly habitat in the whole coastal mosaic.

Critical Black Bear Habitat

We agree with most of the critical black bear habitats listed and are glad to see them. However, as with grizzly bears on the mainland, for island systems with only black bears (few grizzlies) critical black bear habitat class 1 and 2 needs to be identified, with a similar 100% retention for critical 1.

Also, a glaring omission from critical black bear habitat is that which is most critical of all, old forests that provide big, hollow trees over one meter diameter for black bear hibernation (winter den) habitat. Coastal studies show that black bears are old-growth dependent for the hibernation period. I.e. one-half of their annual life cycle period. Pregnant females also give birth to their young in their winter dens where they are reared for 2-3 months prior to emergence in the spring (maternity/natality dens).

Bear dens in old trees are critical habitat elements that provide protection from inclement weather and protection from predation, particularly for females and cubs. A sufficient supply of old trees for winter dens is necessary for stable black bear populations. Without suitable old-growth den structures bears will not survive the severe coastal winters (Davis 1996). As noted in an ecological review for changing forest management on MacMillan Bloedel's forest tenure in coastal B.C. (Bunnell *et al.* 1998), all of the 150 black bear dens reported in different studies in the Pacific Northwest were in large trees or wooden structures derived from trees (logs, root wads, stumps). Typically trees are over one meter diameter and hollow in the interior or have large cavities developed the root boles underneath (Davis 1996. Hanson 1988).

Black bear denning habitat on the BC coast appears to have a high overlap in some areas with commercial forest (McCrary *et al.* 2008), similar to southeast Alaska. On Mitkof Island, which is similar to wetter near-shore islands on the north and central BC coast, logging of over 4,575 ha of commercial forest resulted in the loss of an estimated 500 black bear dens (Hanson 1988). In the extensively logged Nimpkish Valley on Vancouver Island, Davis and Harested (2006) concluded that loss of winter dens from clearcutting resulted in an increase in cannibalism of less dominant bears.

Critical habitat for marbled murrelet, northern goshawk, tailed frog and any other focal species

These needed to be added in the definitions. We are extremely puzzled by their omission, while we understand deer have only been added recently to the focal species list. These needed to be added to definitions.

Climate change - Needs to be defined.

Corridors, travel routes and linkages - Need to be included and defined.

Equivalent clearcut area — Valhalla Wilderness Society consultant, hydrologist Allan Isaacson with 25 years experience as a senior hydrologist with the US Forest Service, was on the US Forest Service team that developed the ECA concept. Isaacson says it isn't used anymore. The reason is "it didn't work" to protect watersheds. Isaacson has repeatedly slammed the misuse of this concept by the BC Ministry of Forests.

OBJECTIVES - Part 2, First Nations

Objective 5 — Culturally Modified Trees

VWS sponsored some of the first surveys with First Nations of CMTs on the BC Central Coast, partly from which a book was published by researcher David Garrick.

This objective allows CMTs to be logged subject to permission of the First Nation involved. VWS does not agree with any logging or destruction of Culturally Modified trees. These are a priceless heritage trees dating back to the early 1700s or so and are not to be sacrificed for shortsighted logging interests. Some also provide black bear denning habitat, marbled murrelets nesting habitat, and shelter for Sitka deer in the winter.

Section 5(2)(a)(b) and (c) provide reasons why the logging company would seek this permission from the First Nation: 1) the CMT is not held important anymore, 2) a logging road must pass through the area, or 3) protecting a number of CMTs would make logging of the block economically unviable.

The value of CMTs to First Nations is enduring, but the opinions and values of any particular elected band council are only temporary. The claim that logging will not be economically viable if all the CMTs have to be protected, or that a logging road must pass through, is up to the whim of the particular logging company, and should not be used as leverage to pry CMTs away from aboriginal peoples or their rightful place in the rainforest as an ancient living legacy for those who follow to see and appreciate.

OBJECTIVES - Part 3, Aquatic Habitats

Objective 8 – Important Fisheries Watersheds

THIS OBJECTIVE DOES NOT PROTECT IMPORTANT FISHERIES WATERSHEDS. In coastal ecosystems, with steep slopes and heavy rains, some areas should not be logged at all. In particular, they should not have roads built. Valhalla Wilderness Society's hydrology consultant tells us that one logging road can silt up a fish stream. Equivalent clearcut area is not effective at protecting watersheds from logging. Amongst other things, much of the damage comes from roads, which respond to water and slope stability regardless of ECA. Further, under objective 8(2) constraints on equivalent clearcut area can simply be waived according to the procedure of consulting with First Nations, doing a watershed assessment and making an adaptive management plan "to the extent *practicable*." In other words, if a logging company wants quick

entry into a watershed or wants to save on costs, it may not be “practicable”, to follow even the procedure for waiving the ECA.

There is also no mention in the objectives of the need to avoid of the logging of steep, unstable slopes that lead to landslides and mass wasting that destroys fish habitats. What has been learned from the past here?

In addition, under the current *Act*, there is no accountability and responsibility under “results-based forestry” if a landslide does damage a fisheries river or stream or even causes loss of life or other impacts, provided the logging company has done all of the required pre-logging assessments.

Objective 9 – high-value fish habitat

We do not agree with the reserve zone of 1.5 tree lengths. It should be as in Alaska, a minimum of over 150 m, if not larger. Often these stream/river reserve zones have intensive bear and wildlife travel trails with marking (rub) trees and mark trails and a wider zone will help protect these critical movement corridors for bears and wildlife. We do not agree with section 9(2) allowing the leave strip to reduced or widened by one-third.

Further, in many cases the hydrological impacts to high value fish streams will be draining down steep slopes directly from the mountaintops. Again, high-value fish habitat should not be logged or roaded where this is the case.

Objective 10 – aquatic habitat that is not high-value fish habitat

This includes S1 to S3 streams. Leave strips 1.5 times the height of the dominant trees could allow for massive clearcutting of areas with these streams. The allowance to vary the width of the leave-strip by one-third (likely for the passage of logging roads) is unacceptable. The usual retinue of procedures is available to waive the requirement for 90% retention in the leave strip to 70% retention. IN MANY AREAS THE IMPACTS OF THIS LOGGING FLOW DOWNSTREAM TO FISH STREAMS.

Objective 11 – Forested Swamps

A similar situation as Objective 10, above, only the forest retention objective is only 70%, with the usual retinue of allowances to reduce that to 60%, including: “where 70% retention would make harvesting the cutblock economically unviable. Again, this is economic-based management with the logging companies deciding at their discretion what is viable and what is not.

Objective 12 – upland streams — Same as above only the retention restrictions can be waived an unspecified amount if the company obtains a watershed assessment verifying that the logging will not damage the water. As stated previously, logging companies have been obtaining such assessments for years, but they turned out not to be true, thus the numerous and damaging landslides to fisheries and other habitats on the coast, at great costs to the other natural resources.

Objective 13 – Active Fluvial Units

A little tighter restriction, with 90% retention for an area 1.5 times the height of the tallest trees. The waiver provisions allow a reduction to 80%. But something in all these riparian habitat objectives is radically wrong if the leave strips are only 1.5 times the height of the trees, yet the logging companies cannot forebear from logging some of that too. Again, these leave strips are harbringers of extensive clearcutting.

Part 4 – Biodiversity Objectives

Objective 14 — Biodiversity

Perhaps retaining 50% or less of a landscape unit as mid seral (i.e. logged forest) for each site series is an improvement. but it should be far less. This is not going to protect biodiversity at all, particularly where it is clearcut areas that become the early and then mid seral habitat. At this stage these closed canopy second-growth forests, many formerly rich in old growth biodiversity, have become biological deserts.

Subject to the usual procedures, the biodiversity objectives for forest retention can be waived by an unspecified amount.

Objective 14(7) directs old-growth retention to be, where possible, overlapping with retention for mountain goats, grizzly bears, northern goshawks, tailed frogs and marbled murrelets. The forest retention for these animals should be located where the animals need it, not where it will overlap with other values and thus save the logging companies money. There are some serious omissions here, because we see no objectives for these species. These need to be added.

No Objectives for climate change - unacceptable

There need to be objectives. Studies now tell us that as the impacts of climate changes begin to impact our ecosystems, maintaining large areas of intact forests offers the greatest chances for the resiliency and adaptaptions to change by plants and wild animals. Clearcuts offer the least resiliency and carbon storage values. Intact forests provide greater value for carbon sequestration and storage than cutover forests (Wilson and Hebda 2008). BC forests have some of the highest carbon stores in Canada (avg. 311 tons per hectare). This stored carbon is worth an average of \$1,072 per hectare. Trees can now worth more standing that cut down.

If the government and other parties who negotiated this EBM Order truly understood the degree of danger our world faces from climate change, we would not be logging our old-growth forest. The US Forest Service Climate Change Resource Center says that the elimination of logging US public lands, “could result in an annual increase of as much as 43 percent over current sequestration levels on public timberlands and would offset up to 1.5 percent of total U.S. greenhouse gas (GHG) emissions. In contrast, moving to a more intense harvesting policy similar to that which prevailed in the 1980s, may result in annual reductions of 50 to 80 percent in anticipated carbon sequestration (Depro et al. 2008).” BC’s old-growth coastal temperate rainforest must surely be hugely richer in carbon stores than that.

No objectives for wildlife corridors, travel routes and linkages

Need to be added if you are at all going to call this process EBM.

16. Objectives for stand level retention

We do not agree with cutting more old-growth and leaving 15 % of old trees in wildlife reserves in cut blocks, large and small. Spread over the landscape of the THLB, such as in prime black bear denning habitat, Sitka deer winter range, or marbled murrelets nesting habitat, is a prescription for cumulative losses of old-growth habitats for these and many other species.

As an alternative, there should be very large old-growth reserves to protect focal species dependent on the natural forests, High Conservation Value Forests. These would include all identified high value black and grizzly bear denning habitats, marbled murrelet nesting areas, Sitka deer winter range, and so on.

17. Objectives for critical grizzly bear habitat

We are pleased to see at least critical Class 1 grizzly habitat to be given 100% protection. This is a big improvement. However, Class 1 should also include old growth den habitat for grizzly bears.

As well Class 1 **critical black bear habitat**, with winter den habitat added to Class 1 Critical, should also be given 100% protection; esp. on island systems where grizzlies rarely occur.

18. Kermode bear stewardship areas. Objectives for Kermode bear habitat in the Central and North Coastal Order (Section 18), include the following objectives for within defined Kermode stewardship areas:

- Maintain a maximum of 30% early-seral and 40% mid-seral within identified watersheds;
- Maintain a maximum 70% crown closure within managed stands by the end of the free-growing period;
- Do not alter critical black bear habitat; and
- Establish windfirm reserves adjacent to known black bear dens.

The defined Kermode Stewardship Areas are the northern tip of Princess Royal Island and Gribbell Island.

We disagree strongly with some of the recommendations/objectives but agree with protection of den sites.

To say under EBM the objective for these area is to maintain a maximum of 70 % seral means that 70% has and will be stripped of their old growth by past and planned logging to achieve this. This has to be a mistake.

The objectives of the 70% maximum seral state (early and mid) in identified watersheds means a lot will continue to be logged. The only stewardship areas the on map provided are north Princess Royal, which has already been heavily logged and Gribbell Island, in which most of the riparian watersheds, including the two salmon bearing streams, have already been extensively clearcut. While early seral has some benefit to bears with increased berry and forb production and some bears use them, this is of short-term benefit. Some bears (especially females) avoid clearcuts while others that use them such as adult males and subadults may concentrate feeding near the perimeter of artificial forest openings (Hanson 1988). Late early seral and mid-seral are proven depauperate areas for bears due to closed canopy and we do not see this changing much. Logging has already caused landslides and mass wasting on Gribbell Island and North Princess Royal Island. Clearcutting has also caused extensive blow-downs of old growth in some riparian areas on southeast Gribbell Island.

In addition, the Gitga'at First Nation from Hartley Bay now derive significant revenue and important seasonal jobs and widespread publicity for "saving the white bear" from their bear viewing operations on Gribbell Island. This will be jeopardized as well if logging is allowed to continue.

Our Society, other bear scientists, the public and some local First Nations do not support any further logging in the Kermode Stewardship Area. We support protection for the following reasons:

Gribbell Island is the black bear species genetic jewel of the Great Bear Rainforest, if not North America. A DNA analysis by Ritland and Marshall (2001) concluded that Gribbell Island was not only “*the island richest in white bears*” but “*exhibited substantial genetic isolation*”. The study states “*Kermodeism was established and is maintained in populations by a combination of genetic isolation and somewhat reduced population sizes in insular habitat.*”

Based on these genetic studies, Gribbell has an estimated 30+ % white-phase, higher than any other area within the range of the Kermode bear on the coast. Princess Royal just to the south has about 10% white-phase while the adjacent mainland peninsula just the east has about 0.3% white-phase. This represents an on-going evolutionary process. Our crude population estimates also confirm that the Gribbell bear population is relatively small, between 98 – 143 individuals (McCrorry et al. 2003. *Draft*). Of these, estimated 29 – 43 would be expected to be white-phase.

Such small semi-isolated populations on islands are quite vulnerable. In our opinion, enough logging has already been done of most of the small valleys with the richest riparian bear habitats, including two salmon streams. Although it is good that critical black bear dens will not be logged, continued logging causes other long-term negative changes in food supply, access issues and effects on bear social interactions.

The Kermode Stewardship Areas need to full protection, not logging guidelines.

SUMMARY

The current state of the EBM Order has created only a mask of Ecosystem-based Management designed to cover logging-as-usual, with the ravaging of coastal forests to be shipped, in today’s market conditions, as raw logs to the endless market demand of China. A real ecosystem-based management plan would put much greater emphasis on better management of the vast areas of already logged lands within the context of some ecosystem restoration. And it would radically reduce the allowable annual cut. This is the taste-test of ecosystem-based management. The BC government has a record of initiating conservation programs without removing areas from the AAC. Eventually watersheds and every sensitive ecological value are caved-in to the ongoing juggernaut to feed the mills.

If further logging is to occur in old growth areas of the south, central and north coast it should only be done with light touch systems that mimic natural disturbances. For example, for black bears Davis et al. (2006) outlines very explicitly that: “**Silvicultural practices that attempt to emulate the natural disturbance regime of coastal temperate rainforest likely provide the best balance between food productivity and security for females**”. [Eds. note. Black bears.]. Small gaps resulting in the extraction of 3 – 10 trees in an otherwise continuous forest matrix (Lertzman et al. 1996) would better mimic historic natural conditions for female black bears than found under past management practices.” Such an approach would also protect black bear denning trees. Partial cutting in southeast Alaska has also been shown to allow some timber management wild retaining old forest ecology. Deal et al. (2002) found in a review of partial cutting logging shows that: “**Silvicultural systems based on partial cutting can provide**

rapidly growing trees for timber production while maintaining complex stand structures with mixes of spruce and hemlock trees similar to old-growth stands.”

In conclusion, the Definitions, Objectives and Schedules are really an Order for the inexorable process of species extinction to continue, logged ancient forest by logged ancient forest. Significant improvement or this EBM Order is a sham.

Sincerely,

Wayne P. McCrory, RPBio.
Coordinator, Spirit bear/coastal projects
Valhalla Wilderness Society

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