

**HB**

**91**

<TARGET><BILL>HB 91</BILL><SUBJECT>HB  
91</SUBJECT><COMM>HRES27</COMM></TARGET>

## House Bill 91

Testimony before the State of Alaska, House Resources Committee  
April 2, 2012 – Juneau, Alaska

by

Charles E. "Ed" Wood, Co-Founder  
Mitkof Highway Homeowners Association

1. The reason House Bill 91 is a citizen's initiative is because it had to be. While I mean no disrespect, I am very concerned about the future viability of HB 91.
2. The Alaska Division of Forestry has been reluctant to step up to its responsibilities to attempt to mitigate potential accelerated landslide activity on the public by trying on its own to acquire statutory authority to do so.
3. The Board of Forestry itself has on a number of occasions expressed opposition to amend the Forest Resources and Practices Act to include public safety.
4. As a consequence, I am concerned that the Board of Forestry will not take the initiative to recommend the State of Alaska adopt any meaningful best management practices.
5. While I feel that the expertise to manage timber harvests within inhabited landslide hazard areas should exist within the Division of Forestry I have yet to see the will to do so.
6. Because of my long and exhausting involvement on this issue, on behalf of the Mitkof Highway Homeowners Association, I have no illusions remaining that common sense will prevail beyond the Legislature. That is where my distrust of the word "appropriate", Lines 12 and 14 on Page 2 of HB 91, as a substitute for our original word "strict" evolves from.

7. I would ask that the House Resources Committee consider that the highest priority safety standards be substituted for “appropriate” because the intent of HB 91 is preventive. If “appropriate” remains in the bill, then I would ask for a definition of the phrase “appropriate safety standards” to be added to the Forest Resources Practices Act. For example, “appropriate safety standards” means “standards which provide the maximum use consistent with the public interest, taking into consideration as the highest priority the public safety of all individuals and communities who could be affected by timber harvest and logging operations.”

8. As it has turned out, people were encouraged by the State and Federal governments to settle in what are now recognized as landslide hazard areas. It is your task to safeguard the public and I fear that there is too much ambiguity in the word “appropriate” for you to succeed.

9. Thank you, Mr. Chair and Committee members, for providing me this opportunity to speak in support of HB 91.

10. Contact information:

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- House Bill 91 -  
Testimony before the State of Alaska, House Resources Committee  
March 30, 2012 - Legislative Information Office/Petersburg, AK  
by  
Michele Pfundt, Member  
Mitkof Highway Homeowners Association - Petersburg, Alaska

1. Mr. Chair and House Resources Committee members, my name is Michele Pfundt, I am a resident of Petersburg and a member of the Mitkof Highway Homeowners Association. I would like to request that you pass House Bill 91 into the House of Representatives for consideration.
2. Alaska's forests contain a great resource, and it is a resource that currently is not protected under the Alaska Forest Resources and Practices Act. That great resource is the people of Alaska, Alaska's greatest resource.
3. The greatest legislation that can be addressed by any legislator is that proposed by the people. House Bill 91 is such legislation, born through the diligence of a few for the protection of the many in Alaska. HB 91 is a preventative measure designed to give statutory authority to the Division of Forestry to safeguard the public in timber harvest practices.
4. In December 2005, a large state agency, which owns land throughout this state as a private landowner, submitted a logging plan to the Alaska Department of Natural Resources to log parcels of land uphill from residents and transit routes in Petersburg. That logging plan was signed without consideration of the danger that that logging plan may pose to the members of the local community.
5. Upon hearing about this plan, many of our local citizens gathered together and formed the Mitkof Highway Homeowners Association. We are a mixed group of average citizens, many of whom, like myself, have never opposed any logging activity before. However, we had enough knowledge of the terrain and effects of logging to be concerned about logging a steep gradient behind our homes. Our concern over the plan to log Petersburg's backdrop on steep slopes behind the homes of over 95 families and the daily transit way of over 800 vehicles led us to seek the assistance of Douglas Swanston. Dr. Swanston, retired United States Forest Service geologist, is the leading authority on logging steep hillsides and he confirmed that the logging plan presented to the community of Petersburg was unsafe. It was at that time that we discovered that the Alaska Forest Resources and Practices Act protects fish spawning streams or fresh water, but that it does not provide the Division of Forestry the authority to address public safety related to timber harvest activities. We were told that there was nothing that we could do except wait for any damage resulting from possible unsafe logging practices, and then sue the person or entity responsible, or enact local zoning ordinances.
6. Petersburg's story is not a singular incident in this state. We live in a rainforest and the most logical place for settlement in Southeast Alaska is on the shoreline at the base of large, steep mountains. It's a beautiful place to live but living in this rainforest and seeking a sustainable harvest of timber can sometimes conflict. When these conflicts arise then the public which lives at the base of these steep hillsides must be protected for they are the very reason that we must protect the fish and the water sources. The Board of Forestry's Science and Technical Committee found that only 1/4 of 1 % of the loggable timber lands under state control are of such a gradient and are above homes or important transit roads. Yet in just one community, there are almost 100 families affected by this lack of a public safety provision. Across the state there are many more families living in this limited area who will be positively affected by this legislation.
7. We know that when there is a dangerous practice that has the potential of affecting many individuals in a state, then legislation is the proper way to address the situation. The purpose of good legislation is to proactively address conflicts between adjacent landowners, not to expect its citizens to "duke it out" after one landowner injures another. Especially when the Division of Forestry has been given the mandate to administer the state's forested lands and passing House Bill 91 can guide them in addressing public safety.
8. As citizens who sought Representative Wilson's aide in proposing this legislation, the Mitkof Highway Homeowners Association is very aware that legislation may not be the first avenue to addressing this problem. However, we have arrived at this present time having attempted to address this problem through the proper channels. The Mitkof Highway Homeowners Association approached the Board of Forestry, through the State Forester, asking them to form

policy or recommend that the Forest Resources and Practices Act be amended to include a consideration of public safety. They sought the advice of the Alaska State Attorney General and were told that they could NOT consider public safety in logging practices because the very words "public safety" were not included in the Alaska Forest Resources and Practices Act. They also determined that they could not amend the Forest Resources and Practices Act, that such an amendment was beyond a policy change and would require a legislative amendment. After we started working on HB91 the Board of forestry has twice voted to not take an official stand on HB91, instead recommending that, at the present, local communities should rely on their own zoning ordinances. However, this is a statewide issue and local zoning ordinances place an undue burden upon local communities. Local communities do not have access to a Science and Technical Committee as the Board of Forestry does. Local communities are put in fear of a takings action that they are ill-equipped to defend if they now enact those zoning laws. Requiring local zoning ordinances also does not work for a statewide problem when many of the communities in Alaska are unorganized and have no zoning authority. Mitkof Highway Homeowners Association has diligently went through the whole administrative process without a solution. It was only after all of this that Mitkof Highway Homeowners Association sought the assistance of Representative Peggy Wilson for a legislative solution and HB 91 was born.

9. Alaska's constitution inherently guarantees that the state, by way of its government and agencies, must consider the safety of its public. However, there are currently no public safety considerations within the Alaska Forest Resources and Practices Act regarding timber harvesting. How is it, then, that an agency or a legislative act can operate in contravention of the Alaska State Constitution? The States of Washington, Oregon, and California, as well as the western provinces of Canada have all recognized that their forest practices acts should contain public safety considerations. In this situation, Alaska truly is the last frontier, but in this situation it is not a mark of honor but one of shame. Alaska should remain the last frontier in its mystique but never in its sworn ability to consider the safety of its public, because it is its public, its people, that are truly its greatest resource.

10. Thank you, Mr. Chair and members of the committee for your consideration of House Bill 91.

Contact information:

Michele Pfundt

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# HOUSE BILL 91

“An Act relating to the regulatory and administrative standards for managing forest resources.”



October 28-29, 2011  
Natural slide terminating in rock pit (see middle left photo on reverse)  
6.2-Mile Mitkof Hwy (State Highway #7)  
Petersburg, Alaska  
Photo: Ed Wood



September 23, 2011  
Natural slide debris  
6.2-Mile Mitkof Hwy (State Highway #7)  
Petersburg, Alaska  
Photo: Suzanne West



September 23, 2011  
Natural slide debris  
6.2-Mile Mitkof Hwy (State Highway #7)  
Petersburg, Alaska  
Petersburg Pilot Photo



November 30, 1988  
Natural slide  
6.2-Mile Mitkof Hwy (State Highway #7)  
Petersburg, Alaska



November 30, 1988  
Natural slide, DOT cleanup underway  
6.2-Mile Mitkof Hwy (State Highway #7)  
Petersburg, Alaska  
Petersburg Pilot Photo



November 30, 1988  
Slide debris from clearcut above Tain Creek  
6-Mile Mitkof Hwy (State Highway #7)  
Petersburg, Alaska  
DOT Photo



March 29, 1990  
Condition of clearing slide debris from  
6-Mile Mitkof Hwy (State Highway #7)  
Petersburg, Alaska  
DOT Photo

## Supplemental Information

March 29, 2012

Prepared by  
MITKOF HIGHWAY  
HOMEOWNERS  
ASSOCIATION



October 14, 1988  
Natural slide, DOT slide cleanup  
8-Mile Mitkof Hwy (State Highway #7)  
6-Mile Taain Creek, Petersburg, Alaska  
Photo: Bud Paterson



January 12, 2009  
Slide debris logjam in Taain Creek, post 1988 harvest  
6-Mile Mitkof Hwy (State Highway #7) Petersburg, Alaska  
Photo: Ed Wood, MHHA



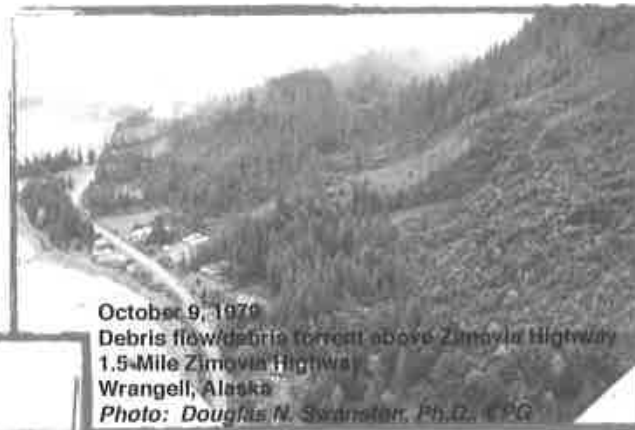
September 20, 2009  
Natural slide. Two new 4-foot culverts installed in mid-2009 by DOT during State funded roadway improvement replacement project on Mitkof Highway. DOT cleanup lasted 7 days.  
6.2-Mile Mitkof Hwy (State Highway #7) Petersburg, Alaska  
Photo: Suzanne West



September 21-22, 2009  
Natural slide terminating onto  
5.2-Mile Mitkof Hwy, State Highway #7  
Petersburg, Alaska DOT Photo



October 28-29, 2011  
Natural rock pit damaging structures and vehicles  
5.2-Mile Mitkof Highway, State Highway #7  
Petersburg, Alaska Petersburg Pilot Photo



October 9, 1979  
Debris flow/debris torrent above Zimovia Highway  
1.5-Mile Zimovia Highway  
Wrangell, Alaska  
Photo: Douglas N. Swanston, Ph.D., CPG



October 9, 1979  
Automobile and large woody debris from debris torrent lodged on the beachside.  
Note log resting on power line. Log raft storage visible in background.  
1.5-Mile Zimovia Highway  
Wrangell, Alaska Photo: Douglas N. Swanston, Ph.D., CPG



October 9, 1979  
DOT slide debris cleanup  
1.5-Mile Zimovia Highway  
Wrangell, Alaska  
Wrangell Sentinel Photo

# HOUSE BILL 91

“An Act relating to the regulatory and administrative standards for managing forest resources.”

## Supplemental Information

March 29, 2012

Prepared by  
MITKOF HIGHWAY  
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<b>A</b>	MHHA Letter to Reps Seaton/Feige (29 March 2012)
<b>B</b>	HB 91 - Testimony by Charles E. Wood (30 March 2011)
<b>C</b>	House Bill No. 91 (27-LS0352\M) (11 February 2011)
<b>D</b>	Sponsor Statement - House Bill 91
<b>E</b>	House Bill 91 - Sectional Analysis
<b>F</b>	Rep. Peggy Wilson Letter to Board of Forestry (4 August
<b>G</b>	MHHA Letter to Chris Maisch, State Forester (28 February 2012)
<b>H</b>	DNR Report #83-17: Geologic Hazards... (July 1983)
<b>I</b>	FRPA Update on Scoping of Landslide Hazards (7 October 2006)
<b>J</b>	S&TC Scoping Maps - MHHA Plotted Mitkof Island Slides
<b>K</b>	DOT Traffic Map - Mitkof Island / Petersburg (2010)
<b>L</b>	S&TC Scoping Maps (Version 8 – 13 February 2011)
<b>M</b>	White Paper on Landslides, Public Safety ... (June 18, 2008)
<b>N</b>	White Paper on Landslides, Public Safety ... (January 2010)
<b>O</b>	FRPA LS&TC Meeting #2 Minutes (1 April 2009)
<b>P</b>	FRPA LS&TC Meeting #3 Minutes (23 November 2010)
<b>Q</b>	Douglas N. Swanston, Ph.D., CPG - Résumé
<b>R</b>	Final Minutes - Board of Forestry (12-13 February 2008)
<b>S</b>	Final Minutes - Board of Forestry (17-18 March 2010)
<b>T</b>	Draft Minutes - Board of Forestry (29-30 November 2011)
<b>U</b>	Alaska's Constitution - A Citizen's Guide (Fourth Edition, P. 128)
<b>V</b>	
<b>W</b>	
<b>X</b>	
<b>Y</b>	
<b>Z</b>	

# MITKOF HIGHWAY HOMEOWNERS ASSOCIATION

P.O. Box 383 • Petersburg, AK 99833 • 907-772-3480

29 March 2012

Representative Paul Seaton  
Representative Eric Feige  
House Resources Committee  
State of Alaska  
Room 124, Capitol  
Juneau, Alaska 99801-1182

Dear Representatives Seaton and Feige,

It is not often that you find people from both industry and the environmental community on the same side, however, the membership of the Mitkof Highway Homeowners Association (MHHA) has both. The MHHA consists of 95 homeowners and citizens of Petersburg who formed our group out of concerns over the wisdom of a December 2005 proposed timber harvest by the Alaska Mental Health Trust Land Office, on the steep unstable slopes above our homes, Mitkof Highway, also known as State Highway #7, and the Tyee hydroelectric corridor.

We ask for your indulgence as we present our case for the need for House Bill 91 which is solely intended as a preventive measure. We would like to point out at this time, that though our focus has been primarily based upon our Petersburg Mitkof Highway hillside issue, HB 91 has relevance in at least eight populated areas from Ketchikan to Cordova, or inside the boundaries of 12 communities and/or boroughs, based on information researched and presented by the Alaska Board of Forestry's Landslide Science & Technical Committee.

Our experience with this issue has been long and exhausting, 6 years and counting, not to mention costly to the tune of over \$127,000 of our own money. Most, if not all of this effort and expense would have been unnecessary had the Division of Forestry had the authority to address public safety as related to timber harvest on steep unstable slopes within inhabited areas in Alaska's Forest Resources and Practices Act, or FRPA.

MITKOF HIGHWAY HOMEOWNERS ASSOCIATION



Charles E. "Ed" Wood, Co-Founder

Attachments (1): House Bill 91 / Supplemental Information / March 29, 2012

**- House Bill 91 -**

Testimony before the State of Alaska, House Resources Committee  
March 30, 2012 - Juneau, Alaska

by

Charles E. "Ed" Wood, Co-Founder  
Mitkof Highway Homeowners Association

1. Mr. Chair, House Resources Committee members, my name is Ed Wood. I am representing the Mitkof Highway Homeowners Association, as one of its cofounders.
  
2. The Alaska Forest Resources & Practices Act, or FRPA, is the Division of Forestry's controlling authority for all timber harvest in Alaska, on State, municipal, and private properties.
  
3. FRPA's "Section 41.17.080 - Regulations" addresses forest practices such as disease and insect infestation, reforestation, water quality and fish habitat, road construction and maintenance, fire and flood hazard management, and all aspects of timber harvesting. The notable exception being public safety precautions relating to potential landslides associated with timber harvest within inhabited areas.
  
4. California, Oregon, and Washington each address public safety in their forest practices pertaining to timber harvest related landslides in one way or another. The Minister of Forests & Range in British Columbia has the power to intervene on any activity that is likely to have a catastrophic impact on public safety. Alaska remains the only coastal region north of the Mexican border that does not address public safety in any way in its timber harvest practices. [BINDER TABS "M, N and R"]
  
5. Because of the Division of Forestry's lack of authority to address public safety, the MHHA approached the State Forester on October 10, 2007, with a proposal to amend the FRPA. Our proposed amendment was a verbatim quote from a 1983 Department of Natural Resources document titled, "Geologic Hazards in Southeastern Alaska: An Overview" which states in part,

“Activities that increase susceptibility to slope failures (such as logging) should be prohibited or restricted if slope failures pose a danger to life or property.” [CLOSE QUOTE] [BINDER TABS “H”, p. 9” and “M”, p. 1]

6. This same document also includes:

“Timber harvesting is a leading contributor to slope failure. A correlation has been found between frequency of mass movements and timber harvesting (Bishop and Stevens, 1964).” [BINDER TAB “H”, p. 7]

7. The March 17-18, 2010 Board of Forestry Meeting Minutes includes the Attorney General’s Office advising that,

“public safety could be added to one section of the FRPA, for example, AS 41.17.060(b)(5) without requiring that public safety be considered under the Acts other provisions.” [CLOSE QUOTE] [BINDER TAB “S”, p. 30]

8. That is what we have done with HB 91.

9. On a fiduciary note, some of Alaska’s most valuable assets, including roads and public buildings funded and constructed at State expense; as well as private homes, personal property, and human lives may be at increased risk in unstable areas because of accelerated landslide activity due to timber harvest.

10. I doubt there is another legislator who is more supportive of the timber industry than Representative Peggy Wilson, however, she also sees the need to keep Alaska communities safe. Representative Wilson’s letter to the Board of Forestry and the State Forester three and a half years ago, on August 4, 2008, stated:

“Other states have looked at this issue and taken steps to ensure safety both to the environment and to homeowners and their property. As a legislator, and also personally, I deem public safety to be a top priority in Alaska. I am optimistic that the Division of Forestry is willing to move toward this goal and

at the same time provide good management practices throughout the state. This can be a win-win situation for the state and for Alaskans.”

[CLOSE QUOTE]

[BINDER TAB “F”]

11. Since 2007, the Division of Forestry’s own Landslide Science & Technical Committee found the inhabited landslide hazard areas in its scoping study to represent less than ¼ of 1% of the available timber base. While small in area, they are of huge importance to those of us who live and transit in them. In the final analyses, people can only build homes and raise families where land is made available to them for settlement. **Consider then that the State with its constitutionally mandated policy in Article VIII, Section 1, encouraged settlement in landslide hazard areas affecting at least eight populated municipalities and communities, or within the boundaries of 12 communities or boroughs between Ketchikan and Cordova. While the State may not have recognized these areas as being unstable at the time, they have now been scientifically scoped and mapped as “landslide hazard areas”.** The State’s responsibility to safeguard the public should not be outsourced to industry, large private landowners, or through local zoning ordinances. HB 91 gives the Division of Forestry the authority to manage timber harvests statewide within inhabited areas with public safety being the highest priority or benefit.

[BINDER TABS “C, J, K and L”]

12. For the record, I’d like to end with a short paragraph from the **Fourth Edition of Gordon Harrison’s “Citizen’s Guide to Alaska’s Constitution”, Page 128:**

“Article VIII of Alaska’s constitution clearly establishes that the natural resources of Alaska should be developed. Indeed, to the convention delegates, the very success of statehood hung in the balance. But while this article creates a strong presumption in favor of resource development, it will not abide that which is wasteful...or contrary to the rights of others and the larger public interest.” [CLOSE QUOTE]

[BINDER TAB “U”]

13. Thank you, Representative Wilson, for sponsoring HB 91. Thank you, Mr. Chair and Committee members, for providing me this opportunity to speak in support of HB 91.

14. Contact information:

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27-LS0352\M  
Bullock  
2/16/11

**CS FOR HOUSE BILL NO. 91( )**  
**IN THE LEGISLATURE OF THE STATE OF ALASKA**  
**TWENTY-SEVENTH LEGISLATURE - FIRST SESSION**

**BY**

**Offered:**  
**Referred:**

**Sponsor(s): REPRESENTATIVE PEGGY WILSON**

**A BILL**  
**FOR AN ACT ENTITLED**

1 **"An Act relating to the regulatory and administrative standards for managing forest**  
2 **resources."**

3 **BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:**

4 **\* Section 1.** AS 41.17.060(b) is amended to read:

5 (b) With respect to state, municipal, and private forest land, the following  
6 standards apply:

7 (1) to the maximum extent possible, all applicable data and  
8 information of applicable disciplines shall be updated and used in making decisions  
9 relative to the management of forest resources;

10 (2) environmentally sensitive areas shall be recognized in the  
11 development of regulations and best management practices that are designed to  
12 implement nonpoint source pollution control measures authorized under this chapter;

13 (3) administration of forest land shall consider marketing conditions  
14 and other economic constraints affecting the forest landowner, timber owner, or the

1 operator;

2 (4) to the fullest extent practicable, harvested forest land shall be  
3 reforested, naturally or artificially, so as to result in a sustained yield of merchantable  
4 timber from that land; if artificial planting is required, silviculturally acceptable  
5 seedlings must first be available for planting at an economically fair price in the state;  
6 [AND]

7 (5) significant adverse effects of soil erosion and mass wasting on  
8 water quality and fish habitat shall be prevented or minimized;

9 (6) threats to public safety within one-half mile of a public road or  
10 adjacent to an area of human habitation shall be prevented or minimized;

11 (7) timber harvest and logging operations in or near an area of  
12 human habitation shall be subject to appropriate safety standards to protect  
13 human life and property on slopes of greater than 45 percent grade or 24 degree  
14 slope angle; when establishing appropriate safety standards, the commissioner  
15 and the board shall consider factors affecting slope stability and risks to public  
16 safety, including

17 (A) soil types, particularly those with low or minimal  
18 cohesion, coarse textures and high permeabilities underlain by relatively  
19 impervious substrata that inhibit or stop vertical water movement  
20 through shallow overburden;

21 (B) ground disturbance and logging debris accumulations  
22 that may cause local slumping or formation of debris dams in existing  
23 gullies and shallow drainage channels;

24 (C) destruction or reduction of stabilizing root systems;

25 (D) increased potential for uprooting and overthrowing  
26 trees by wind because of increased wind exposure resulting from timber  
27 harvest or logging operations;

28 (E) the likelihood of higher groundwater levels and soil  
29 saturation from rainfall and snowmelt on slopes due to canopy removal  
30 and the uprooting and overthrowing of trees because of increased wind  
31 exposure;

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(F) the presence of active and dormant debris flow and debris torrent channels within a proposed harvest area; and  
(G) the need for or the benefit from a site-specific risk analysis; and  
(8) the state forester shall give public notice to affected property owners and local governing bodies of potential hazards of timber harvest and logging operations that are subject to safety standards under (7) of this subsection.

# ALASKA STATE LEGISLATURE



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## REPRESENTATIVE PEGGY WILSON HOUSE DISTRICT 2

### SPONSOR STATEMENT House Bill 91

“An Act relating to the regulatory and administrative standards for managing forest resources”

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HB 91 defines forest management practices for logging in steep unstable terrain within inhabited forested areas.

HB 91 is a preventive measure and seeks to work with the Alaska Forest Resources and Practices Act or FRPA which is the State of Alaska Division of Forestry's controlling authority for all timber harvesting in Alaska. The FRPA focuses on protection of public resources, such as timber, fish habitat and water quality. Currently the safety of humans living on the land is not addressed as a resource and has not been considered when planning timber management.

Despite a more than 4 year effort, the State has been unable to adopt regulations to safeguard the public. It has become apparent that the issue must be addressed in statute. The Division of Forestry needs to have statutory authority to address public safety issues while managing Alaska's forests.

The Division of Forestry Science & Technical Committee's review and scoping of landslide hazard zones in Alaska's inhabited forest areas south of Yakutat have identified less than one percent of land open to timber harvest where citizens live or have road access. Addressing public safety would have a relatively small impact on overall timber harvest. However, it would be a large benefit for inhabitants living in or traveling through these areas. Also it would be consistent with other coastal states' (Washington, Oregon and California) management.

HB 91 provides that public safety will be taken into account when managing Alaska's forests. By researching and learning from past experiences we now know the cause and circumstances that constitute a slide hazard zone. Study has shown that in areas of slopes greater than 45 percent or a slope angle of 24 degrees the risk is too great to chance any unnecessary land disturbance.

People's lives and homes are part of the resources of a viable community. Citizens and community leadership may lack the expertise and jurisdiction to fully address the issue. Just as the Division of Forestry has responsibility for water quality and fish habitat, the prevention of increased landslide potential, due to timber harvest practices should be the responsibility of the Division of Forestry.

# ALASKA STATE LEGISLATURE



*Interim:*  
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Wrangell, AK 99929  
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**REPRESENTATIVE PEGGY WILSON  
HOUSE DISTRICT 2**

## **House Bill 91**

**“An Act relating to the regulatory and administrative standards for managing forest resources”**

### **Sectional Analysis**

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#### Section 1:

- (6) Identifies area of where and when public safety must be a consideration of timber management.
- (7) Identifies conditions that need to be taken into consideration when assessing the risk and factors that will pertain to site in question.
- (8) Makes public notice to property owners and local governing bodies of potential hazards of timber harvest the responsibility of the state forester.



# Alaska State Legislature

Representative Peggy Wilson

House District 2

Putting Alaska's Families First

Aug 4, 2008

Board of Forestry  
Chris Maisch, State Forester  
Alaska Div of Forestry  
550 West 7<sup>th</sup> Ave. Suite 1450  
Anchorage, Alaska 99501-3566

Dear Forestry Board Members,

Thank you for recently making the decision to convene a study group to review and synthesize existing information on landslide occurrence in Alaskan forests. As the Mitkof Highway Homeowners Association has stated, there has been no protection for the public in the last 29 years and I concur with the wording below as a proposed amendment in your white paper that would make a change for public safety:

*Activities that increase susceptibility to slope failures (such as logging) should be prohibited or restricted if slope failures pose a danger to life or property. Critical facilities, homes, and other buildings for human occupancy should not be located in areas susceptible to major slope failure.*

Other states have looked at this issue and taken steps to ensure safety both to the environment and to homeowners and their property. As a Legislator, and also personally, I deem public safety to be a top priority in Alaska. I am optimistic that the Division of Forestry is willing to move toward this goal and at the same time provide good management practices throughout the state. This can be a win-win situation for the state and for Alaskans. I thank you for your time and effort on this matter, and I look forward to your decision.

Sincerely,

A handwritten signature in cursive script that reads "Peggy Wilson".

Representative Peggy Wilson  
Alaska-District 2  
907-874-3088

# MITKOF HIGHWAY HOMEOWNERS ASSOCIATION

P.O. Box 383 • Petersburg, AK 99833 • 907-772-3480

28 February 2012

Chris Maisch, State Forester & Director  
Alaska Division of Forestry  
Department of Natural Resources  
550 West 7th Avenue, Suite 1450  
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CERTIFIED MAIL/RETURN RECEIPT

7007 0710 0000 2449 8304

Dan Sullivan, Commissioner  
Department of Natural Resources  
550 West 7th Avenue, Suite 1400  
Anchorage, AK 99501

CERTIFIED MAIL/RETURN RECEIPT

7007 0710 0000 2449 8311

Governor Sean Parnell  
State Capitol Building  
P.O. Box 110001  
Juneau, AK 99811-0001

CERTIFIED MAIL/RETURN RECEIPT

7007 0710 0000 2449 8243

Dear Chris, Commissioner Sullivan, and Governor Parnell,

I will be out of town during the 20-21 March 2012 Board of Forestry (Board) meeting. In lieu of my planned participation, by teleconference, I have a number of questions including: "Do you, Chris, Commissioner Sullivan, and Governor Parnell plan to support or oppose House Bill 91, sponsored by Representative Peggy Wilson?"

We believe that HB 91 is reasonable, logical, and necessary to protect human life and property in Alaska's inhabited forested landslide hazard areas. The Department of Natural Resources (DNR) has the ability to adopt regulations on this issue but elected to see the Board process through. Now that the Board has completed its "advisory process", we ask for your support of HB 91.

HB 91 is intended to give the Division of Forestry (DOF) the statutory authority to address *public safety* issues pertaining to logging on unstable slopes within Alaska's inhabited forested areas. HB 91 is intended to prevent or reduce landslide activity by mandating "strict safety standards to protect human life and property", and includes certain criteria for consideration before timber harvest. Because both the DOF and the Board have chosen not to

adopt a *public safety* statute, but in essence allowed others to do so, HB 91 is citizen-generated legislation. The intent of HB 91 is to be “consistent with the public interest”, and “for the maximum benefit of its people”, as mandated by the Alaska Constitution. HB 91 also conforms with the Governor’s newly proposed DNR mission statement, except that HB 91 does away with any implied “benefit” and instead specifically identifies *public safety* as the highest priority, i.e., “benefit” in forestry related activity within Alaska’s inhabited landslide hazard areas. After all, doesn’t our Constitution<sup>1</sup> mandate that the State protect the common good, and ensure that we, as citizens, have the right to insist on this protection from the State when the State fails to act on our behalf?

The Board of Forestry’s 4 May 2011 “2010 Annual Report to the Governor” states on Page 6,

“It [Forest Resources and Practice Act (FRPA)] is not the best vehicle for addressing safety issues that affect property rights between neighboring private landowners.”

The issue of *public safety* and timber harvest on steep unstable slopes in inhabited areas in Alaska has nothing to do with “property rights”, rather it has everything to do with regulating timber harvest on State, municipal, and private property which falls under the purview of the FRPA. Our original 10 September 2007 “Proposed Alaska Forest Resources and Practices Act Amendment” was intended as a preventive measure and was a direct quote from one of the Department of Natural Resources’ (DNR) own documents<sup>2</sup>, which specifically states:

“Activities that increase susceptibility to slope failures (such as logging) should be prohibited or restricted if slope failures pose a danger to life or property.”

How that could be misconstrued by the Board in its letter to the Governor as being a dispute between “neighboring private landowners” is beyond belief when it clearly shows that the intent of our amendment was specifically directed at forestry operations on steep unstable slopes in inhabited areas, which should be controlled by the FRPA.

Can it be possible for the State to retain any semblance of credibility with its populace when the FRPA has soil erosion protections for fish habitat and water quality in AS 41.17.060(b) (5), and in turn has resisted any additional protections for humans through the lack of statutory authority, even though citizens have repeatedly asked for safeguards since 10 September 2007?

The “draft” Board meeting agenda for 20-21 March 2012 includes “HB 91-FRPA and Public Safety”. The Board has on at least two occasions nearly voted to recommend that

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<sup>1</sup> Article 1, Section 2 - “All political power is inherent in the people. All government originates with the people, is founded upon their will only, and is instituted solely for the good of the people as a whole.”; The Constitution of Alaska - Fiftieth Anniversary Edition (June 2007).

<sup>2</sup> State of Alaska, Department of Natural Resources, Division of Geological and Geophysical Surveys; Alaska Report Investigations 83-17, GEOLOGIC HAZARDS IN SOUTHEASTERN ALASKA: AN OVERVIEW by R.A. Combellick and W.E. Long, pp. 7-9 (July 1983).

Commissioner Sullivan formally oppose a *public safety* amendment to the FRPA, only to table the issue at the last minute. Additionally, on two other occasions, the Board, after 4-1/2 years of discussion of *public safety*, twice voted by unanimous consent to pass off to local zoning ordinances the State's obligation and authority to manage timber harvests within Alaska's inhabited landslide hazard areas. Is this unanimous consent recommendation by the Board supposed to relieve the State of its primary duty of protecting its people? Hasn't the Board itself made further Board discussion of this issue irrelevant?

Governor Parnell recently proposed the adoption of a revised DNR mission statement:

"To responsibly develop Alaska's resources by making them available for maximum use and benefit consistent with the public interest."

and was quoted in the *Anchorage Daily News* stating, "It comes straight out of the Alaska Constitution. It is Article VIII, Section 1<sup>3</sup>, of the constitution."<sup>4</sup>

Consider, then, that **the State with its constitutionally mandated policy** (Article VIII, Section 1), primarily through DNR, **encouraged settlement in landslide hazard areas within the boundaries of at least 12 communities or boroughs between Ketchikan and Cordova**<sup>5</sup>. This policy is ongoing today, and will result in urban expansion in these areas over time. Did the Federal and State governments not recognize these areas as being hazardous at the time of selling homesite parcels to unsuspecting citizens? The Board's Landslide Science & Technical Committee (S&TC) has issued "Public Safety & Landslide Hazards - Scoping Maps"<sup>6</sup> which clearly identify inhabited landslide hazard areas<sup>7</sup>. Likewise, GIS-generated soils mapping has also confirmed landslide hazards soils throughout the region supporting the S&TC findings.

The second part of Article VIII, Section 1 continues

"Statement of Policy: It is the policy of the state to encourage [the settlement of its land and] the development of its resources by making them available for maximum use consistent with the public interest."

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<sup>3</sup> Article VIII, Section 1: "It is the policy of the State to encourage the settlement of its land and the development of its resources by making them available for maximum use consistent with the public interest"; The Constitution of the State of Alaska - Fiftieth Anniversary Edition (June 2007).

<sup>4</sup> "Parnell backs change in DNR mission statement", Anchorage Daily News (4 February 2012).

<sup>5</sup> Alaska Board of Forestry, "FRPA Landslide Science & Technical Committee - Update on Scoping of Landslide Hazards in Potential Timber Harvest Areas"; Slide 7: Affected municipalities and communities - Hazard in boundary: City & Borough of Wrangell, Haines Borough, Ketchikan Gateway Borough, Cordova, City of Ketchikan, Petersburg, Craig, Coffman Cove, Thorne Bay, Kasaan, Hollis and Whale Pass (7 October 2009).

<sup>6</sup> Alaska Board of Forestry's Landslide Science & Technical Committee Scoping Maps, v.4 (2007) to v.8 (2011).

<sup>7</sup> Alaska Board of Forestry's Landslide Science & Technical Committee - "Scoping Map - Public Safety & Landslide Hazards - :Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting." v.7 (2010) to v.8 (2011).

Question: Doesn't the State violate this section of the Constitution (as well as the Governor's proposed mission statement for DNR) when it first encourages "settlement" at the base of unstable slopes in landslide hazard areas, then later intentionally cedes its authority to regulate potentially destabilizing timber harvests above these "settlements" to local zoning ordinances? Doesn't the State have an obligation to avoid harm to its citizens, and therefore, cannot develop the resource in the "maximum use consistent with the public interest" if, in so doing, it puts the public in harm's way? Without consideration of *public safety*, how is developing the resource "for the maximum benefit of its people", as laid out in Article VIII, Section 2<sup>8</sup>, possible?

For example, in Petersburg, DNR owned the unstable hillside parcels above our homes and Mitkof Highway, which were mapped in 1982 by the US Forest Service as "landslide hazard areas"<sup>9</sup>. Some DNR homesites in this area were even made available with a "Veterans Preference" that rewarded Alaska Veterans' service to country by selling them parcels in a landslide hazard area. DNR quitclaim deeded its unstable Mitkof Highway hillside parcels on 20 September 1996 to the Trust Land Office (TLO). The TLO's 7 December 2005 "Best Interest Decision MHT 9100411 Negotiated Timber Sale, Petersburg Area, Alaska" sited timber harvest as the "highest and best use" for these parcels. **DNR had to know, or should have known when it transferred these parcels that they were located in an inhabited and inherently unstable area with a history of landslides, and that they were intended to be logged even though the Division of Forestry (DOF) had no authority to address *public safety* in its forest practices.** It is logical to assume that similar land transfers or sales occurred in other affected communities.

Logging in identified inhabited landslide hazard areas, which most likely will further destabilize these areas if done without strict State regulations, is not "consistent with the public interest", nor is it somehow a "benefit". Neither is having the DOF standing by and "hoping"<sup>10</sup> for the best, while local zoning ordinances are enacted by people who may or may not possess the expertise which the public expects from State foresters and State soils experts.

To date, Chris, you are the only State Forester on the Pacific Coast north of the U.S.-Mexico border without the authority to address *public safety* within inhabited areas in your Forest Resources and Practices Act. While this may make Alaska unique, it also unnecessarily jeopardizes those who in good faith bought land and unknowingly settled in landslide hazard areas with the blessing of the State and Federal governments. Alaska's forestry related landslides would not be an issue had not the State made it a policy within its Constitution to encourage

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<sup>8</sup> Article VIII, Section 2: "The legislature shall provide for the utilization, development, and conservation of all natural resources belonging to the State, including land and waters, for the maximum benefit of its people."; The Constitution of Alaska - Fiftieth Anniversary Edition (June 2007).

<sup>9</sup> "Hazard Profiles - Landslide Hazard Areas" (1982). Source: "US Forest Service Unpublished Data (City of Petersburg, Comprehensive Plan & Coastal Management Program 1982)".

<sup>10</sup> Alaska Division of Forestry Minutes - 2011 November 29-30 DRAFT, Page 16: "Maisch commented that there is a risk for operating on a steep slope, and that is also a financial decision. Different landowners accept different levels of risk. We hope liability deters bad decisions."

settlement in what later proved to be unstable areas. It is long past time for the State to adopt legislation on this issue, and insure that the "health and the welfare<sup>11,12</sup>" of Alaskans and their communities are protected. The simple fact that the DOF cannot address *public safety* by statute as a preventive measure as related to timber harvest on unstable slopes in inhabited areas has cost the Mitkof Highway Homeowners Association over six years out of our lives, and more than \$127,000.

Representative Wilson's 4 August 2008 letter to you, Chris, and the Forestry Board Members included:

"Other states have looked at this issue and taken steps to ensure safety both to the environment and to homeowners and their property. As a Legislator, and also personally, I deem public safety to be a top priority in Alaska. I am optimistic that the Division of Forestry is willing to move toward this goal and at the same time provide good management practices throughout the state."

Considering that this issue started in December 2005 with our telephone call to DOF in Ketchikan concerning timber harvest on unstable slopes above our homes, the question still remains whether the State will assume its responsibility to safeguard Alaska communities, or will it instead expect others to shoulder its burden through "local zoning ordinances"?

On a fiduciary note, wouldn't the amount of time that has elapsed since citizens asked for statutory provisions to the FRPA to safeguard their homes from timber harvest related landslide activity, substantially increase the State's liability if human life and property were harmed because DNR failed to adequately address *public safety*?

I know, many questions, but we believe our concerns are legitimate. While the S&TC found the inhabited landslide hazard areas in its scoping study to represent a small fraction of the timber base<sup>13</sup>, they are of huge importance to those of us who live and transit in them. In the final analyses, people can only build homes and raise families where land is made available to them for settlement.

There are many State and Federal regulations designed to prevent or reduce accidents or foreseeable harmful incidents. That is the intent of HB 91. Chris, if you, Commissioner

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<sup>11</sup> Article VII, Section 4: "The legislature shall provide for the promotion and protection of public health.;" The Constitution of Alaska - Fiftieth Anniversary Edition (June 2007).

<sup>12</sup> Article VII, Section 5: "The legislature shall provide for public welfare.;" The Constitution of Alaska - Fiftieth Anniversary Edition (June 2007).

<sup>13</sup> Piechart - "Harvest status of land in analysis area (29.4 MMac in SE Alaska from Yakutat south; does not include Cordova): (a) Open to harvest within ½-mi of public road and in hazard zone = 51.7 Mac (0.2%); (b) Hazard zones adjacent to populated areas = 7.6 Mac (0.03%)." Alaska Division of Forestry, Board of Forestry's Landslide Science & Technical Committee, "Update on Scoping of Landslide Hazards in Potential Timber Harvest Areas", p. 10 (7 October 2009).

Sullivan, and Governor Parnell decide to support Representative Wilson and HB 91, I can be reached at 907-772-3480 (home) or 907-518-0480 (cell).

MITKOF HIGHWAY HOMEOWNERS ASSOCIATION

/s/

Charles E. "Ed" Wood, Co-Founder

cc: Mayor Al Dwyer, Petersburg  
Stephen Giesbrecht, Petersburg City Manager  
Michael Geraghty, Attorney General  
State Representative Peggy Wilson  
State Senator Bert Stedman  
Douglas N. Swanston, Ph.D., CPG  
Larry Mayo, U.S. Geological Survey (Ret.)  
Matt Lichtenstein/Joe Viechnicki, KFSK-FM Public Radio  
Ron Loesch, Petersburg Pilot  
Kristen Miller, Esq., Dillon & Findley, P.C

STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

Bill Sheffield -- *Governor*  
Esther Wunnicke -- *Commissioner*  
Ross G. Schaff -- *State Geologist*

July 1983

This report is a preliminary publication of DGGS.  
The author is solely responsible for its content and  
will appreciate candid comments on the accuracy of  
the data as well as suggestions to improve the report.

Alaska Report of Investigations 83-17  
GEOLOGIC HAZARDS IN SOUTHEASTERN  
ALASKA: AN OVERVIEW

By  
R.A. Combellick and W.E. Long

Table 1. Estimated hazard from distant tsunamis for selected communities in southeastern Alaska (from Carte, 1981, updated 1982). 'High' means a wave of 15 m (50 ft); water reaching up to 1.6 km (1 mi) inland is possible. 'Moderate' means a 10-m (35-ft) wave; water reaching up to 1.2 km (3/4 mi) inland is possible. 'Low' means a wave of 6 m (20 ft); water reaching up to 0.8 km (1/2 mi) inland is possible. All communities have a hazard from local tsunamis that could reach the community before a warning could be issued.

<u>Site</u>	<u>Est. hazard</u>	<u>Site</u>	<u>Est. hazard</u>
Angoon	moderate	Klawock	moderate
Annette	moderate	Lena Cove	low
Auke Bay	moderate	Metalkatla	moderate
Cape Pole	moderate	Mud Bay	low
Chatham	low	Myers Chucks	low
Craig	moderate	Pelican	high
Douglas	low	Petersburg	low
Edna Bay	moderate	Point Baker	moderate
Elfin Cove	high	Port Alexander	high
Gustavus	moderate	Saxman	low
Haines	low	St. John Harbor	low
Hamilton Bay	moderate	Shakan Bay	low
Hoonah	low	Sitka	high
Hydaburg	low	Skagway	low
Hyder	none	Tenakee Springs	low
Juneau	low	Thorne Bay	none
Kake	moderate	Ward Cove	low
Kasaan	low	Wrangell	low
Ketchikan	low	Yakutat	high

To mitigate the hazards of tsunamis:

1. Tsunami-hazard zones should be established in areas of proposed development based on the above standards or, preferably, on site-specific evaluations. Development in the zone should be restricted to docking and harbor facilities, open-space recreational areas, parking, and other low-density uses. Critical facilities, such as police and fire stations, hospitals, schools, and permanent housing, should be located outside the zone.
2. A tsunami warning system, including sirens and communications facilities, should be established. A permanent and reliable system for receiving messages from the Alaska Tsunami Warning Center should be installed in each coastal community or logging camp.

#### SLOPE INSTABILITY

Mass movements not related to earthquakes may also occur in southeastern Alaska. (Snow avalanches are treated separately in the next section). Under the general category of landslides, many different types of large-scale slope

failures are common to southeastern Alaska, including debris flows, debris avalanches, rock slides, and rock falls. Landslide scars and deposits have only been mapped in and near some existing communities. A surficial geologic map of the Juneau area (Miller, 1975), for example, shows numerous debris-flow deposits, rockslides, and undifferentiated landslides, many of which lie in or near developed areas.

Most of the large-scale mass movements in southeastern Alaska are debris flows and debris avalanches. These involve mixtures of soil, rock, and forest debris with varying amounts of water (Swanston, 1969). Over 3,800 large-scale mass movements were counted within the Tongass National Forest (fig. 2). Generally, the debris flows and avalanches occur on slopes of  $35^{\circ}$  to  $60^{\circ}$  and involve shallow soils that are derived from weathered bedrock and colluvium. These soils contain a large proportion of large angular rock fragments and some organic debris, and are highly permeable. Underlying bedrock surfaces are often hard and glacially smoothed and steepened, offering little obstruction to downslope movement of the overlying soil and retarding the escape of water.

Debris flows and avalanches also occur in soil profiles developed on till (glacial deposits). Surface-water saturation of the weathered soil profile during heavy rains decreases its shear strength. The failure begins as a rotational movement (slump), with the underlying unweathered till providing the slip surface. The soil mass picks up speed in a downslope direction and develops into a debris flow or avalanche. Till slopes of  $34^{\circ}$  to  $40^{\circ}$  are most susceptible to failure, with the most common occurrence on slopes of about  $37^{\circ}$ . This corresponds with the internal angle of friction determined in the laboratory for these soils (Swanston, 1974).

Rockslides in southeastern Alaska are common on steep slopes underlain by fractured or weathered bedrock. Foliation planes of soft platy minerals in metamorphic rocks provide additional weak zones along which the rock can slide or break apart. Frost action and tree roots help to separate the rocks along these zones of weakness (Miller, 1972).

Nonearthquake-induced slope failures are usually triggered by water saturation from heavy rainfall or rapid snowmelt. Excess water increases the downslope driving force by adding weight to the soil and decreases the resisting forces by saturating the soil and lowering its shear strength. Shallow tills in southeastern Alaska become saturated during storms that produce rain exceeding 13 cm (5 in.) in 24 hr. Such storms occur in southeastern Alaska every 2 to 5 yr (Swanston, 1969).

Artificial factors also contribute to slope failures in southeastern Alaska. Common construction mistakes are undercutting the toe of a slide or overloading an unstable slope with man-made structures. Timber harvesting is also a leading contributor to slope failure. A correlation has been found between frequency of mass movements and timber harvesting (Bishop and Stevens, 1964). As tree roots decay, natural slope stabilization and water absorption are reduced; this appears to be a primary cause of slope failure in harvested areas. The frequency of debris avalanches increases 3 to 5 yr after cutting, which corresponds to the time required for the root systems to decay.

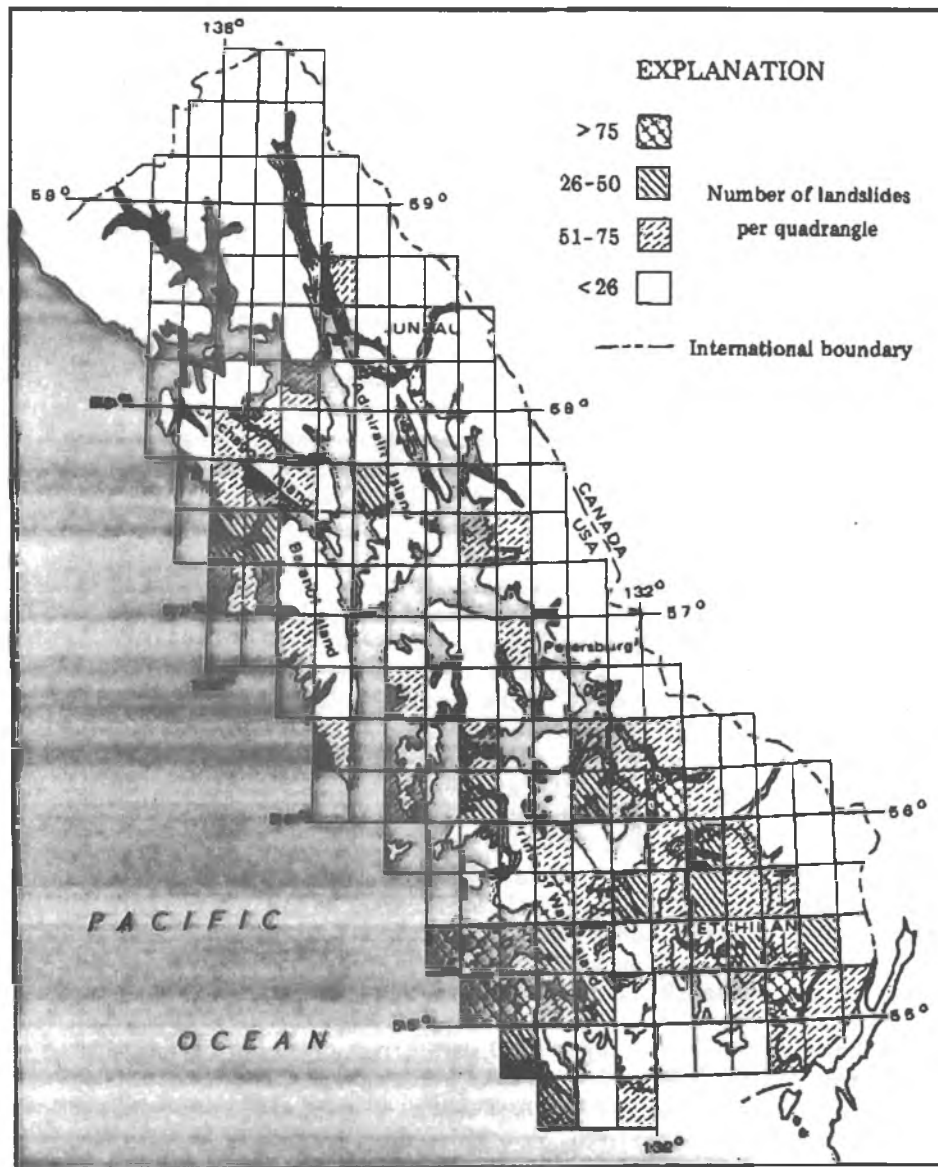


Figure 2. Landslide distribution in southeast Alaska, expressed as number per 15-minute map quadrangle (adapted from Swanston, 1974, p. 7).

The first step in locating unstable areas is to identify and map past slope failures. Areas adjacent to unstable slopes will probably also be unstable. However, many slopes that show little or no evidence of past slope failure may also be unstable. An anomalously heavy rainfall, artificial disturbance, or rapid snowmelt after a winter of heavy snow may be all that is needed to trigger numerous failures on a slope with no evidence of instability.

To mitigate the hazards of slope instability:

1. As part of land-use planning, areas of moderate to steep slopes should be examined for landslide potential by professional engineers or geologists.
2. Construction, excavation, or logging on, above, or below potentially unstable slopes should be preceded by field studies, including drilling or trenching, to determine appropriate grading and construction methods.
3. Use of areas on or below slopes that have potential for severe failure should be restricted to open space, recreational, mineral, and agricultural use. Activities that increase susceptibility to slope failures (such as logging) should be prohibited or restricted if slope failures pose a danger to life or property. Critical facilities, homes, and other buildings for human occupancy should not be located in areas susceptible to major slope failures.

#### SNOW AVALANCHES

Heavy snow precipitation, high terrain, and steep slopes combine to create high avalanche potential over much of southeastern Alaska. Condition of the snow pack differs considerably throughout the region because of differences in elevation, slope, precipitation, temperature, and vegetation.

In southeastern Alaska, the snowpack, which is generally warm and deep, is modified by strong, variable winds and occasional rainshowers during warmer periods. Slope orientation relative to storm paths, wind shadows, and cloud cover has a stronger effect on avalanche potential than direction of incoming solar radiation (Hackett and Santeford, 1980). Avalanches may favor one aspect during one season and a different aspect another season. Large avalanches tend to recur along established paths, although any areas of high, steep terrain can be hazardous because of the wide variability in conditions. An important factor in southeastern Alaska is the strength and variability of winds. Wind, which transports and deposits large volumes of snow, can create a hard crust, providing a sliding surface for snow deposited later.

The severity of hazard from avalanches depends on the nature of the human presence in an avalanche-prone area. Many snow slides and small avalanches occur at high elevations and may be dangerous only to the occasional skier. On the other hand, large, dense, flowing avalanches can reach impact pressures of several tons per square meter (Mears, 1976), travel large distances down a slope (often beyond the base of the slope), and destroy structures not specifically designed to withstand the impact pressures. On many steep slopes in southeastern Alaska, large avalanches incorporate other debris on reaching lower snow-free elevations, thereby substantially increasing potential impact pressures.

Avalanche-potential maps have not been prepared for most of southeastern Alaska at scales appropriate for land-use planning or site-specific evaluation. A preliminary small-scale avalanche potential map of Alaska divides southeastern Alaska into zones of high and moderate potential based primarily on differences in snowfall (Hackett and Santeford, 1980).

Generally, mainland areas have higher snowfalls---and therefore higher snow-avalanche potential---than the milder island and coastal areas. At a scale of 1:63,360, Davidson and Hackett (1980) prepared a generalized map of provisional snow-avalanche potential for the Juneau B-2 Quadrangle based on elevation, slope, known and suspected avalanche activity, climatic conditions, and regional snowpack characteristics. Other than several large-scale studies of the Juneau vicinity (Daniel and others, 1972), detailed information on snow-avalanche potential is not available for most of southeastern Alaska.

Avalanche potential can be assessed by identifying and mapping avalanche scars and moderate to steep slopes above treeline. Although this technique may overlook adjacent areas having avalanche potential, it will identify those areas most susceptible to avalanche activity. In general, any moderate to steep slope in southeastern Alaska (greater than about 30°) that rises to elevations above 300 m (1,000 ft) above sea level (and land downslope from such areas) should be suspected as having avalanche potential. Detailed field investigations should be done in such areas prior to development.

To mitigate the hazards of snow avalanches:

1. Prohibit building of permanent structures in areas of moderate to high avalanche potential and restrict those areas to low-density or transitory uses such as summer recreation, parking, and habitat preserves.
2. Where structures must be built in areas of avalanche potential, install snow-supporting fences in the starting zones and deflecting or protection structures in the runout zones. These approaches are quite expensive.
3. Before removing vegetation (such as by loggers), determine its effect on avalanche potential, particularly if the area is upslope from existing or proposed structures.
4. Develop avalanche warning systems for any frequently used areas of moderate to high avalanche potential.
5. Artificial triggering of avalanches with explosives or artillery should not be considered an acceptable mitigation technique in developed areas.

#### SEDIMENT EROSION AND DEPOSITION

Riverbank, soil, and coastal erosion all occur in southeastern Alaska to varying degrees. The problem is localized and must be examined on a site-specific basis. Because the two major rivers in southeastern Alaska, the Alsek and the Stikine, pass through national-park and wilderness areas, riverbank erosion is not an extensive or persistent problem for development. Substantial erosion can occur during floods; therefore, flood zones are also subject to erosion problems.

Soil erosion occurs primarily in timber-harvest areas, but also affects areas downslope and downstream where large volumes of eroded sediment may be deposited. Under natural conditions, areas of dense forest cover are eroded very little, but can be subject to severe erosion if trees are removed. Where

vegetation is removed, erosion may begin as sheetwash and gully erosion, and then develop into debris flows. Tree cutting increases runoff because it reduces the amount of water intercepted by the canopies or absorbed by the roots through transpiration.

Most coastlines in southeastern Alaska are dominated by steep slopes and cliffs with no significant benches and can be classified as erosional or neutral. Site-specific information on erosion rates is available for a few communities, but no regional evaluation of coastal erosion has been made. The severity of coastal erosion can only be determined by long-term surveys or by comparison of aerial photographs and large-scale maps over several decades. The latter are not available for much of southeastern Alaska for periods long enough to determine rates of coastline change.

Sediment deposition is primarily a problem in channels and harbors. Sediments are deposited near the mouths of streams or in areas where wave-generated longshore currents transport sediment from areas of high wave-energy to areas of low wave-energy. For example, sediment from the Mendenhall river near Juneau continues to build a delta southward across Gastineau Channel, creating a serious navigational hazard. Only small boats are now able to use that portion of the channel, and many run aground each year. Though strong tidal currents remove much of the sediment deposited by the river, the channel may be closed off completely if not periodically dredged. The Chilkat River has the highest sediment yield per square kilometer of drainage area of any river in Alaska (8.4 million metric tons) and is depositing an extensive fan and delta as its mouth in Lynn Canal (AEIDC, 1975).

To mitigate hazards from sediment erosion and deposition:

1. Potential problems of erosion or deposition should be taken into consideration prior to any development along a stream or coastline, or prior to opening an area of timber harvesting. Site-specific studies based on expected erosion rates should be performed to establish setback distances on coastlines or riverbanks.
2. Corrective engineering measures such as jetties, seawalls, or revetments should be avoided. Although such measures may correct an erosion problem in one area, they may contribute to erosion or deposition in another; moreover, they are often only temporarily effective.

#### REGIONAL UPLIFT

Although rapid land uplift associated with major earthquakes (as occurred during the 1899 earthquake at Yakutat Bay) can be a potentially serious geologic hazard, gradual regional uplift is not. However, because this process is taking place in southeastern Alaska and can be significant over long periods, it should be considered in long-range planning. Regional uplift is important to consider when selecting sites for community and coastal facilities.

Tide-station data and changes in elevation of tidal bench marks have been used to calculate average uplift rates in southeastern Alaska for more than

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# **FRPA Landslide Science & Technical Committee**



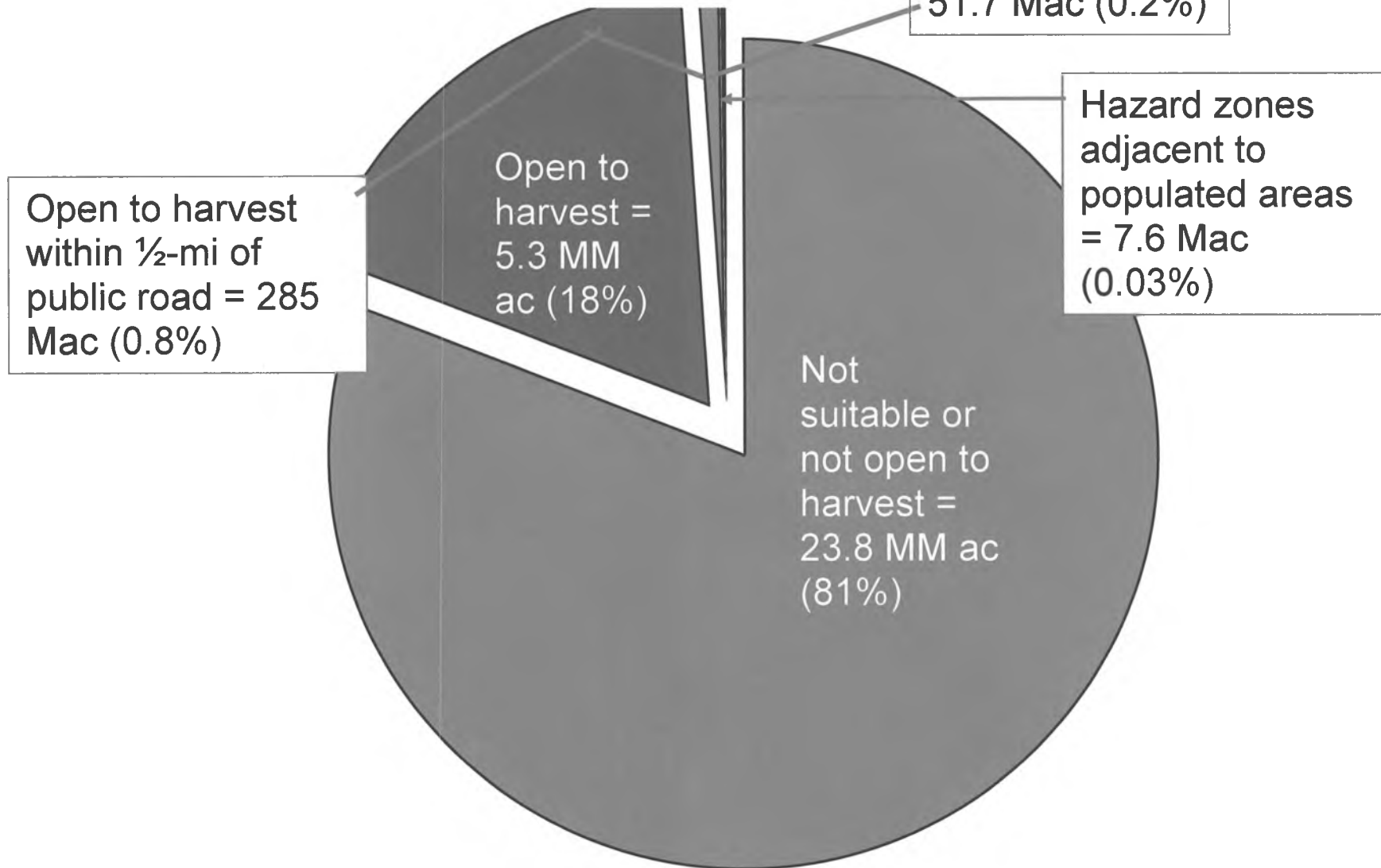
Update on Scoping of Landslide Hazards in  
Potential Timber Harvest Areas

October 7, 2009

# Affected municipalities and communities

Community	Hazard in boundary?	Hazard in pop. area?
City & Borough of Wrangell		
Haines Borough		
Ketchikan Gateway Borough		
Cordova		
City of Ketchikan		
Petersburg		
Craig		
Coffman Cove		
Thorne Bay		
Kasaan		?
Hollis		
Whale Pass		?









Harvest status of land in analysis area  
(29.4 MMac in SE Alaska from Yakutat  
south; does not include Cordova)



# SCOPING MAP Public Safety & Landslide Hazards Mitkof Island Area

## Land Manager

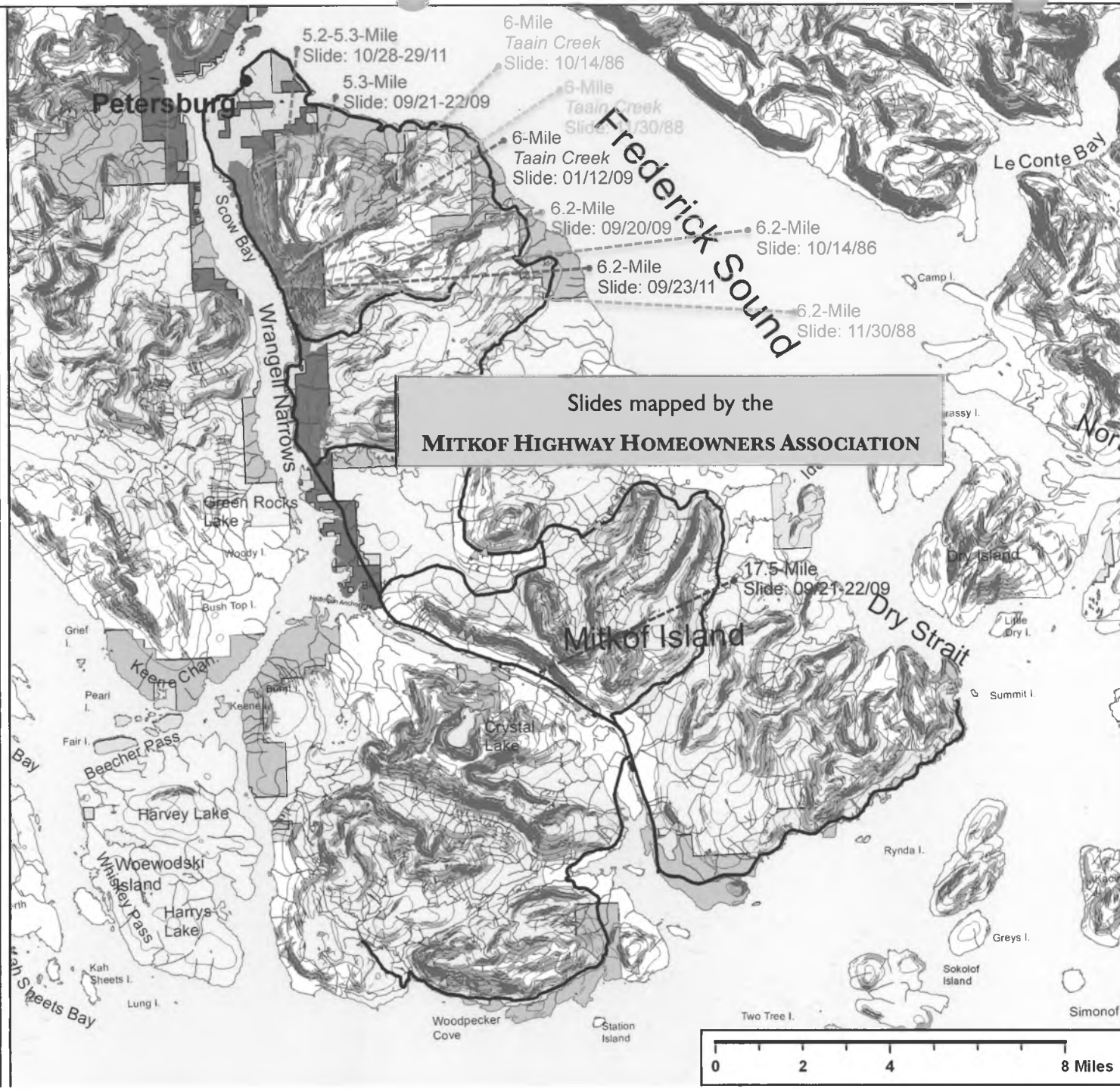
-  USFS
-  USFS - Natural Land Cover
-  State of Alaska
-  Mental Health Lands Trust
-  University of Alaska
-  ANCSA Corporation
-  Private/Local Government

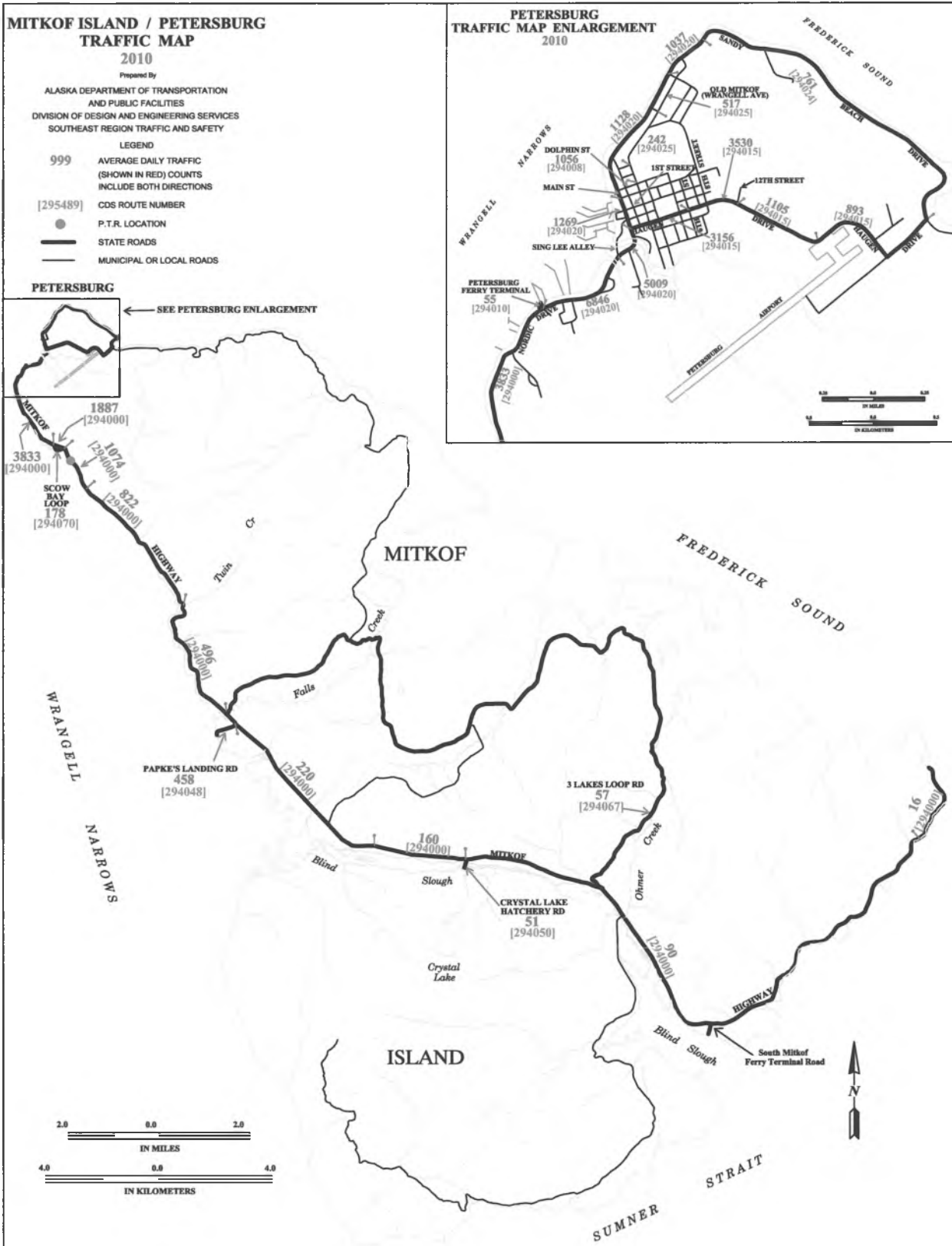
-  USFS Documented Landslides (point)
-  USFS Documented Landslides (polygon)
-  Analysis Road
-  Other Forest Roads
-  50% - 67% Slope
-  67%+ Slope
-  Areas with public roads that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting
-  Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting

Land Status - Assembled from data provided by the Tongass National Forest and the Alaska Dept of Natural Resources (2007). Additional land management information was drawn from the USGS Protected Area Database for Alaska (2006).

Roads - Assembled from the Alaska Division of Forestry Southeast Area and Tongass National Forest Roads Inventories. Roads selected for exposure to public safety were those with a TNF Management Objective of 3 (suitable for passenger cars) or higher, with additional roads identified by the Landslides ST&C.

Slopes - Calculated using the 20 meter Digital Elevation Model developed by NASA Shuttle Radar Topography Mission (SRTM), 2000.













The Alaska Department of Transportation calculated an "Average Daily Traffic (2010)" of 822 vehicles transiting Mitkof Highway (State Highway #7) under the Alaska Mental Health Trust Land Office's steep and unstable hillside parcels, from Petersburg's 3-Mile ("Marker 294000") to 7-Mile ("Twin Cr") [Twin Creeks logging road]. These parcels are part of the TLO's timber harvest detailed in MHT 9100411. See "Tab R" for landslides in this area crossing Mitkof Highway. These statistics do not include pedestrian or bicycle traffic. NOTE: 2011 Average Daily Traffic data not yet available.

# SCOPING MAP Public Safety & Landslide Hazards Cordova Area

## Land Manager

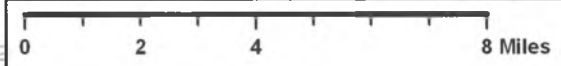
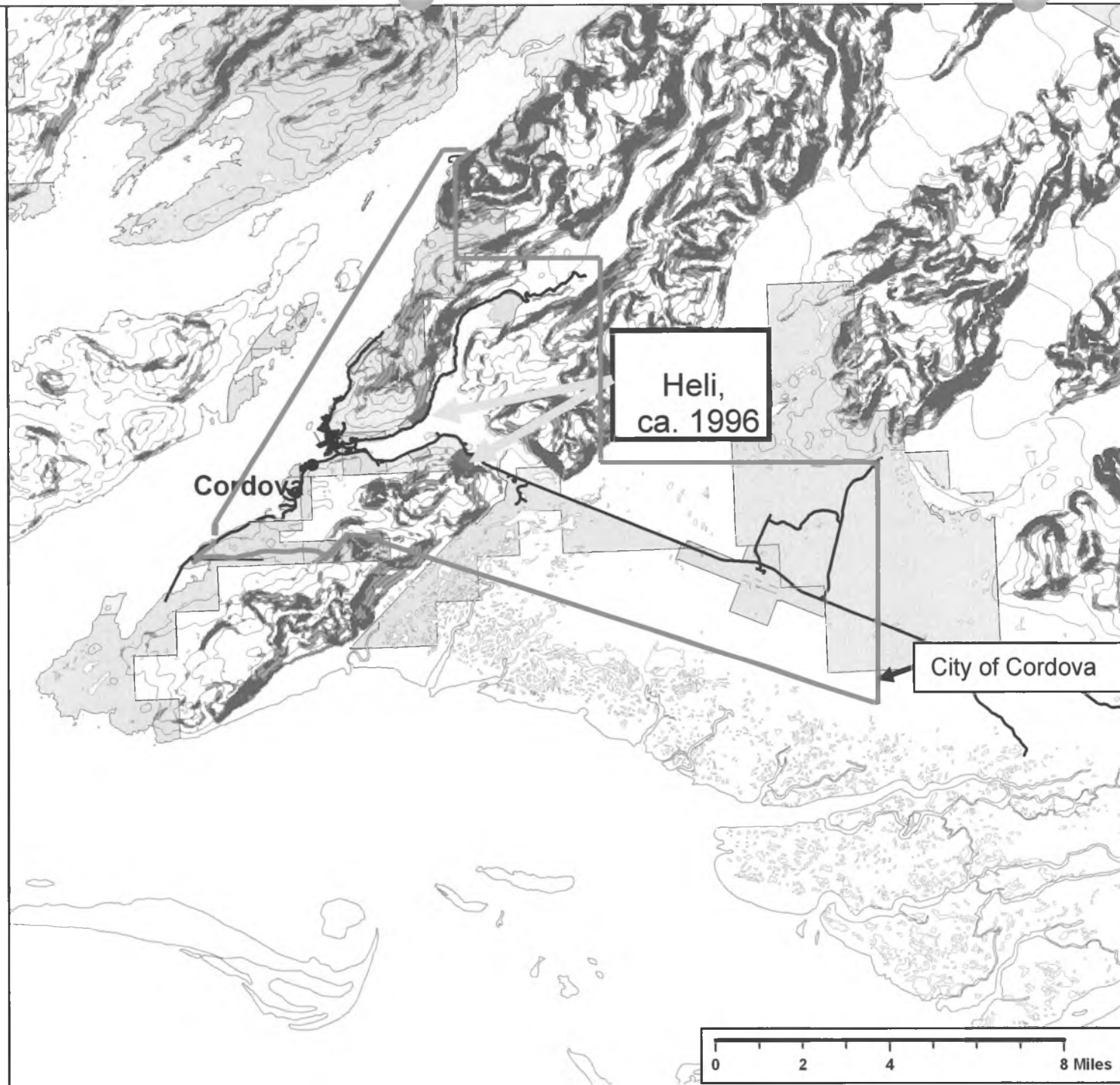
-  Bureau of Land Management
-  Local Government
-  Native Corporation
-  Other Private
-  Protected Natural Land Cover
-  State of Alaska
-  USDA Forest Service

-  USFS Documented Landslides (point)
-  USFS Documented Landslides (polygon)
-  Analysis Road
-  Other Forest Roads
-  50% - 67% Slope
-  67%+ Slope
-  Areas with public roads that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting
-  Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting

Land Status - Assembled from data provided by the Tongass National Forest and the Alaska Dept of Natural Resources (2007). Additional land management information was drawn from the USGS Protected Area Database for Alaska (2006).

Roads - Assembled from the Alaska Division of Forestry Southeast Area and Tongass National Forest Roads Inventories. Roads selected for exposure to public safety were those with a TNF Management Objective of 3 (suitable for passenger cars) or higher, with additional roads identified by the Landslides ST&C.



Slopes - Calculated using the 60 meter digital elevation model (DEM) developed from the USGS 1:63,360 Alaska maps series.







# SCOPING MAP Public Safety & Landslide Hazards Haines Area



## Land Manager

-  BLM
-  State of Alaska (SOA)
-  SOA - Natural Land Cover
-  Mental Health Lands Trust
-  University of Alaska
-  ANCSA Corporation
-  Private/Local Government
-  Haines State Forest

-  USFS Documented Landslides (polygon)
-  USFS Documented Landslides (point)

-  Analysis Road
-  Other Forest Roads

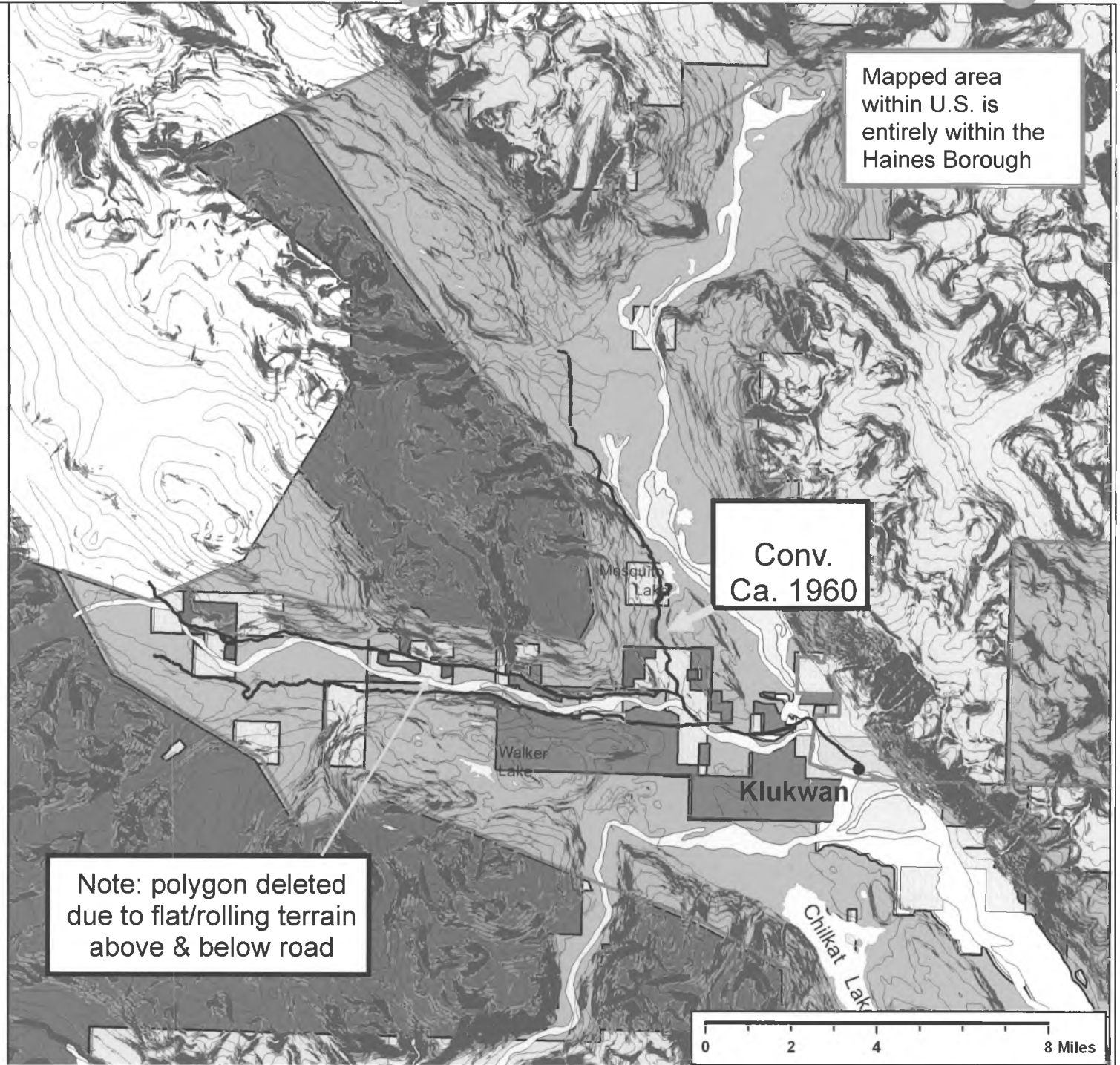
-  50% - 67% Slope
-  67%+ Slope

-  Areas with public roads that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting
-  Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting

Land Status - Assembled from data provided by the Tongass National Forest and the Alaska Dept of Natural Resources (2007). Additional land management information was drawn from the USGS Protected Area Database for Alaska (2006).

Roads - Assembled from the Alaska Division of Forestry Southeast Area and Tongass National Forest Roads Inventories. Roads selected for exposure to public safety were those with a TNF Management Objective of 3 (suitable for passenger cars) or higher, with additional roads identified by the Landslides ST&C.

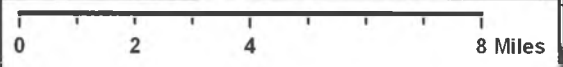
Slopes - Calculated using the 20 meter Digital Elevation Model developed by NASA Shuttle Radar Topography Mission (SRTM), 2000.



Mapped area within U.S. is entirely within the Haines Borough

Conv. Ca. 1960









Note: polygon deleted due to flat/rolling terrain above & below road



# SCOPING MAP Public Safety & Landslide Hazards Hoonah Area

## Land Manager

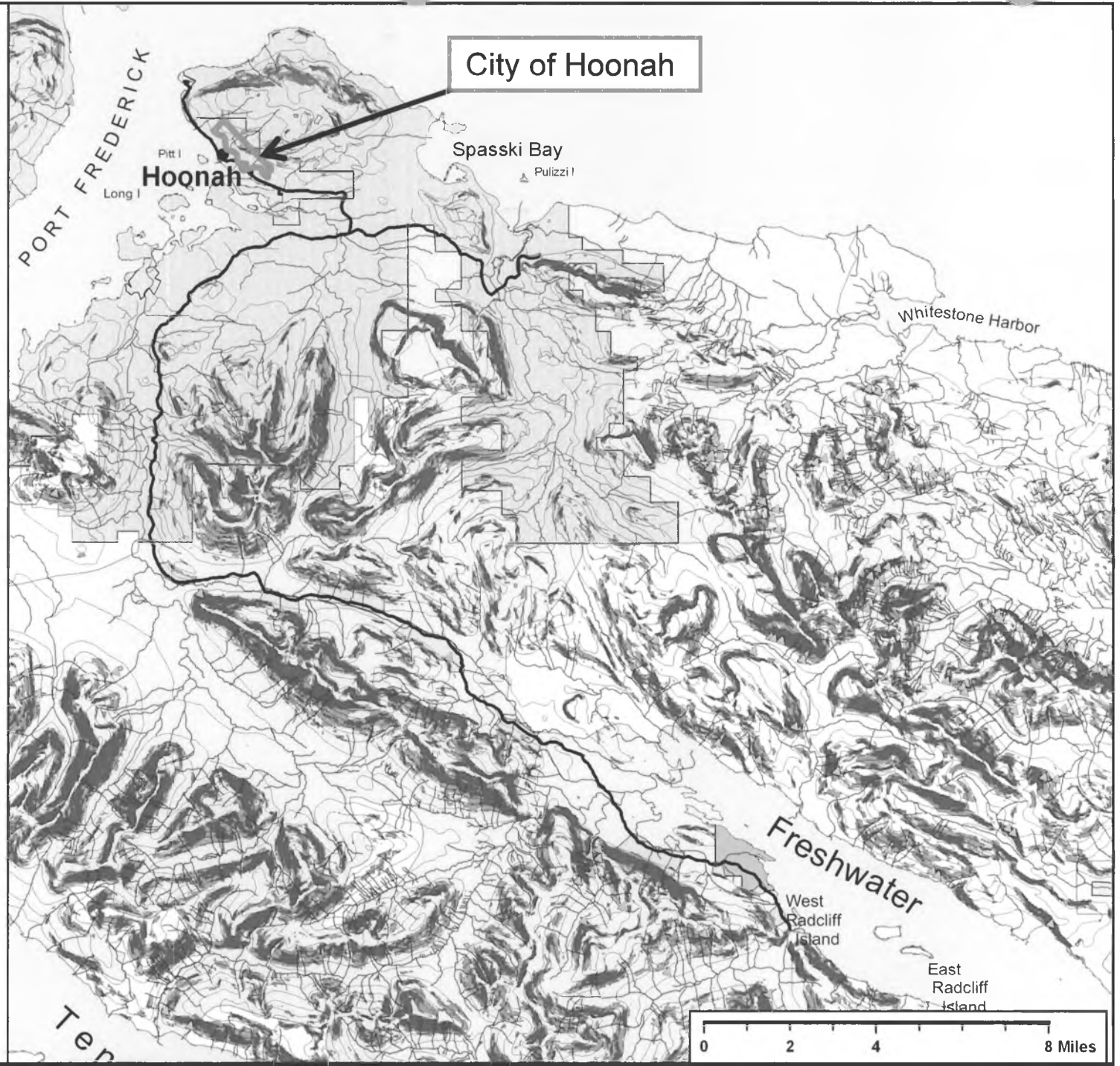
-  USFS
-  USFS - Natural Land Cover
-  State of Alaska
-  Mental Health Lands Trust
-  University of Alaska
-  ANCSA Corporation
-  Private/Local Government

-  USFS Documented Landslides (polygon)
-  USFS Documented Landslides (point)
-  Analysis Road
-  Other Forest Roads
-  50% - 67% Slope
-  67%+ Slope
-  Areas with public roads that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting
-  Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting

Land Status - Assembled from data provided by the Tongass National Forest and the Alaska Dept of Natural Resources (2007). Additional land management information was drawn from the USGS Protected Area Database for Alaska (2006).

Roads - Assembled from the Alaska Division of Forestry Southeast Area and Tongass National Forest Roads Inventories. Roads selected for exposure to public safety were those with a TNF Management Objective of 3 (suitable for passenger cars) or higher, with additional roads identified by the Landslides ST&C.

Slopes - Calculated using the 20 meter Digital Elevation Model developed by NASA Shuttle Radar Topography Mission (SRTM), 2000.













# SCORING MAP Public Safety & Landslide Hazards Wrangell Area

## Land Manager

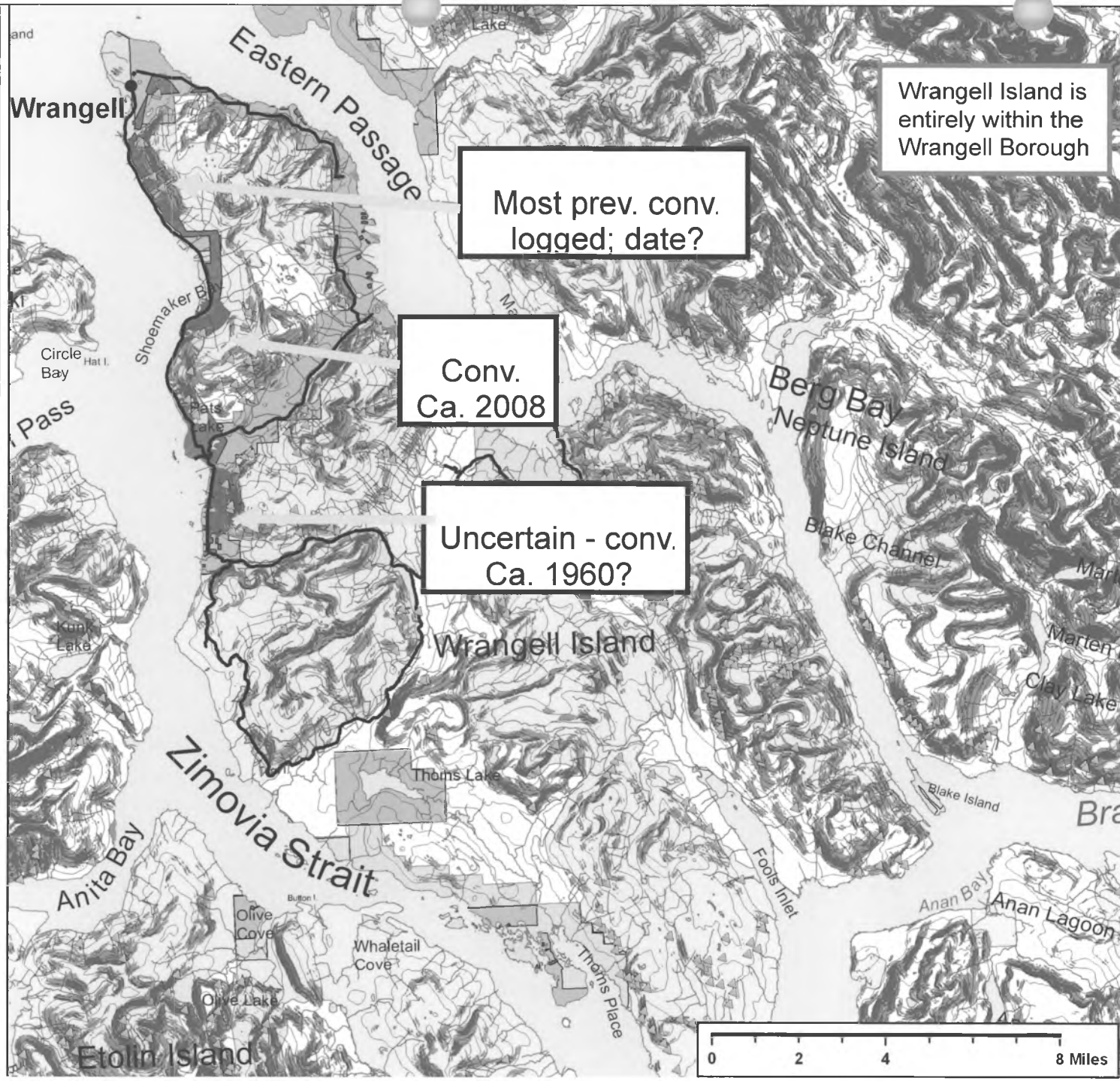
-  USFS
-  USFS - Natural Land Cover
-  State of Alaska
-  Mental Health Lands Trust
-  University of Alaska
-  ANCSA Corporation
-  Private/Local Government

-  USFS Documented Landslides (point)
-  USFS Documented Landslides (polygon)
-  Analysis Road
-  Other Forest Roads
-  50% - 67% Slope
-  67%+ Slope
-  Areas with public roads that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting
-  Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting

Land Status - Assembled from data provided by the Tongass National Forest and the Alaska Dept of Natural Resources (2007). Additional land management information was drawn from the USGS Protected Area Database for Alaska (2006).

Roads - Assembled from the Alaska Division of Forestry Southeast Area and Tongass National Forest Roads Inventories. Roads selected for exposure to public safety were those with a TNF Management Objective of 3 (suitable for passenger cars) or higher, with additional roads identified by the Landslides ST&C.

Slopes - Calculated using the 20 meter Digital Elevation Model developed by NASA Shuttle Radar Topography Mission (SRTM), 2000.

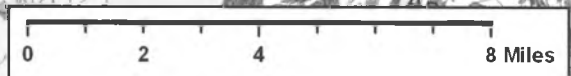


Wrangell Island is entirely within the Wrangell Borough

Most prev. conv. logged; date?

Conv. Ca. 2008









Uncertain - conv. Ca. 1960?



# SCORING MAP Public Safety & Landslide Hazards El Capitan Area

## Land Manager

-  USFS
-  USFS - Natural Land Cover
-  State of Alaska
-  Mental Health Lands Trust
-  University of Alaska
-  ANCSA Corporation
-  Private/Local Government

-  USFS Documented Landslides (polygon)
-  USFS Documented Landslides (point)
-  Analysis Road
-  Other Forest Roads
-  50% - 67% Slope
-  67%+ Slope
-  Areas with public roads that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting
-  Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting

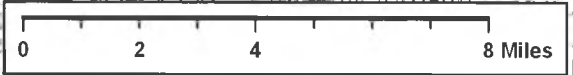
Land Status - Assembled from data provided by the Tongass National Forest and the Alaska Dept of Natural Resources (2007). Additional land management information was drawn from the USGS Protected Area Database for Alaska (2006).

Roads - Assembled from the Alaska Division of Forestry Southeast Area and Tongass National Forest Roads Inventories. Roads selected for exposure to public safety were those with a TNF Management Objective of 3 (suitable for passenger cars) or higher, with additional roads identified by the Landslides ST&C.

Slopes - Calculated using the 20 meter Digital Elevation Model developed by NASA Shuttle Radar Topography Mission (SRTM), 2000.











Conv., Ca. 1965?  
2<sup>nd</sup> growth?



# SCOPING MAP Public Safety & Landslide Hazards Ratz Harbor Area

## Land Manager

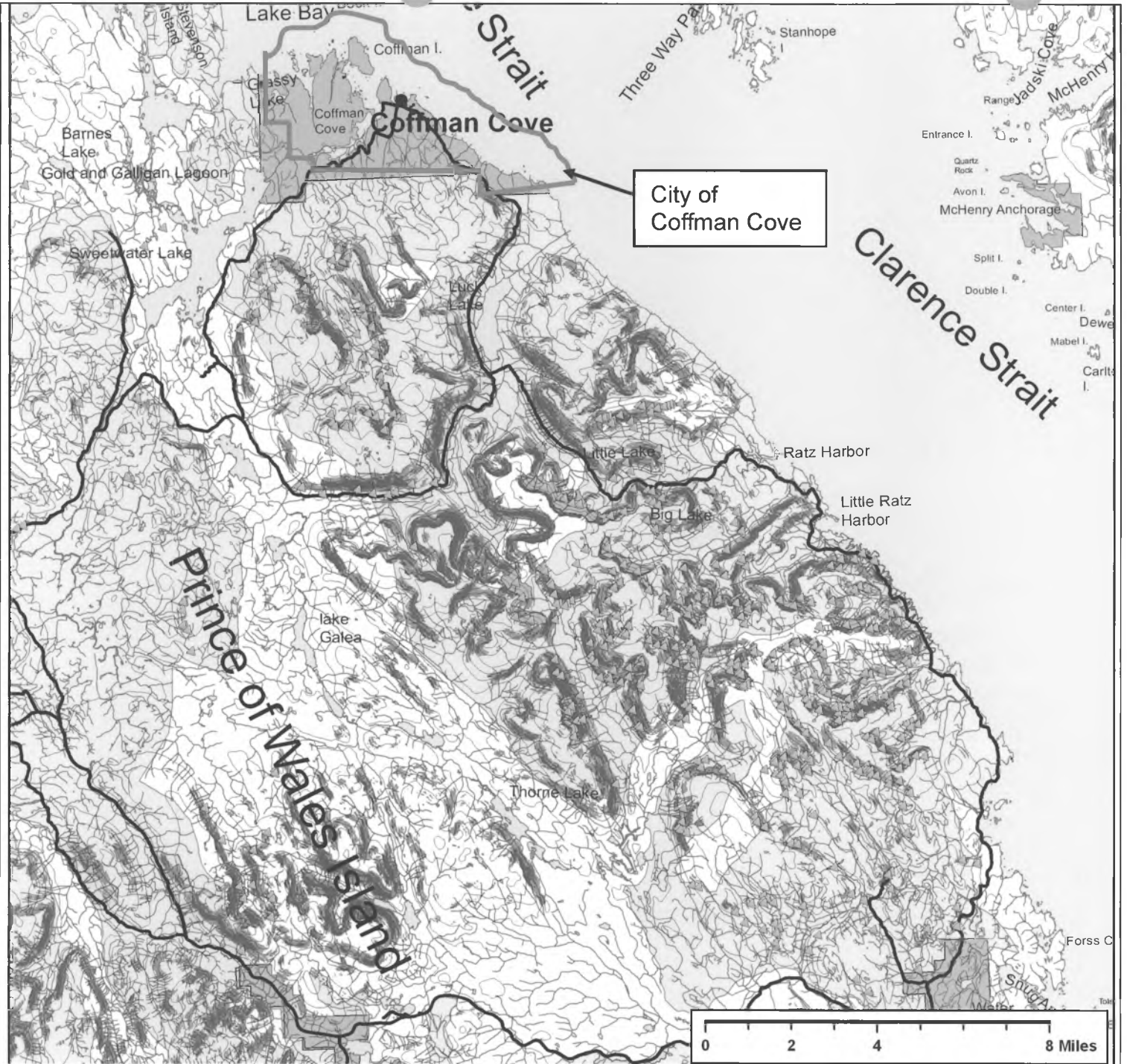
-  USFS
-  USFS - Natural Land Cover
-  State of Alaska
-  Mental Health Lands Trust
-  University of Alaska
-  ANCSA Corporation
-  Private/Local Government

-  USFS Documented Landslides (polygon)
-  USFS Documented Landslides (point)
-  Analysis Road
-  Other Forest Roads
-  50% - 67% Slope
-  67%+ Slope
-  Areas with public roads that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting
-  Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting

Land Status - Assembled from data provided by the Tongass National Forest and the Alaska Dept of Natural Resources (2007). Additional land management information was drawn from the USGS Protected Area Database for Alaska (2006).

Roads - Assembled from the Alaska Division of Forestry Southeast Area and Tongass National Forest Roads Inventories. Roads selected for exposure to public safety were those with a TNF Management Objective of 3 (suitable for passenger cars) or higher, with additional roads identified by the Landslides ST&C.









Slopes - Calculated using the 20 meter Digital Elevation Model developed by NASA Shuttle Radar Topography Mission (SRTM), 2000.



# SCOPING MAP Public Safety & Landslide Hazards Thorne Bay Area

## Land Manager

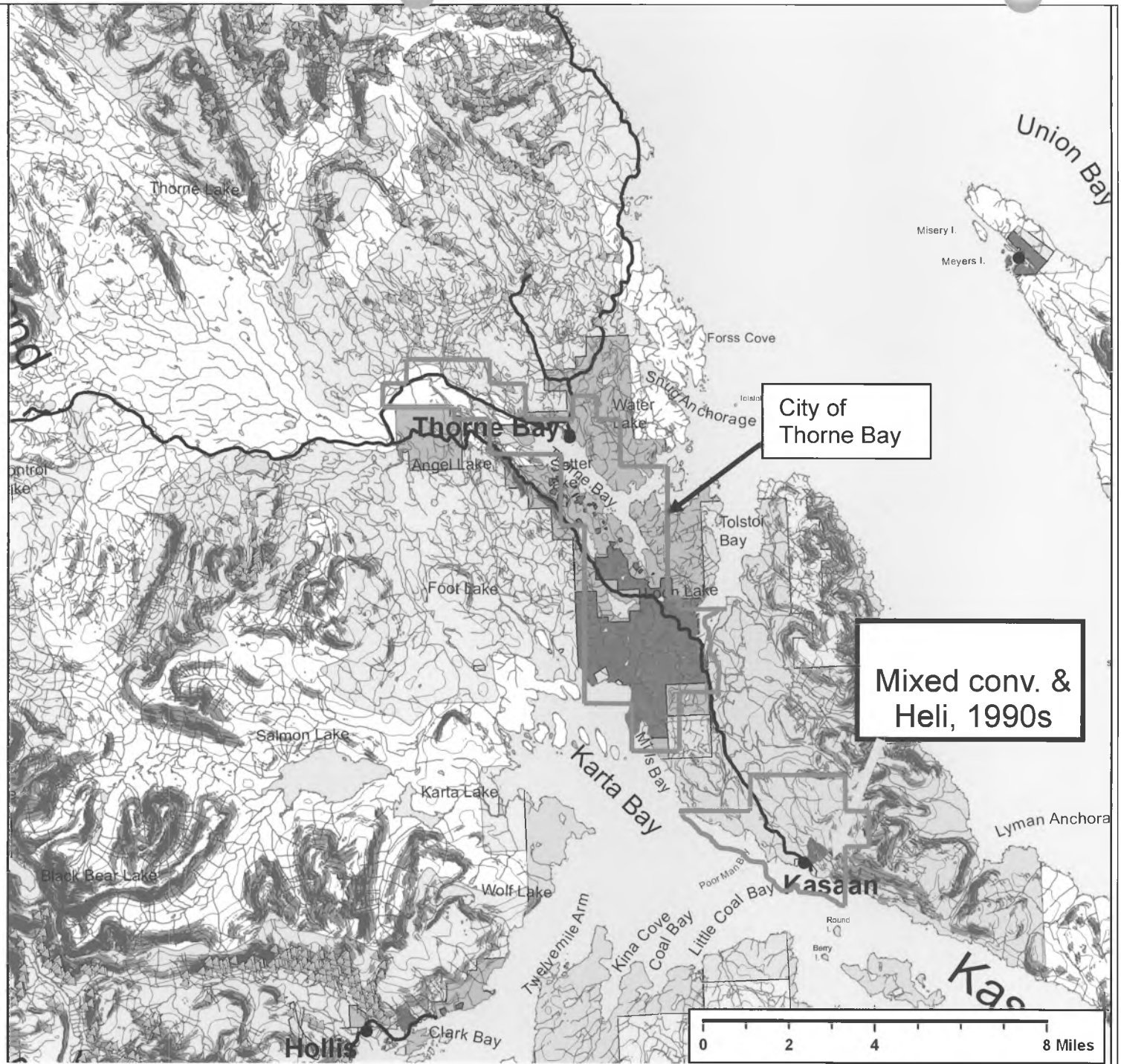
-  USFS
-  USFS - Natural Land Cover
-  State of Alaska
-  Mental Health Lands Trust
-  University of Alaska
-  ANCSA Corporation
-  Private/Local Government

-  USFS Documented Landslides (polygon)
-  USFS Documented Landslides (point)
-  Analysis Road
-  Other Forest Roads
-  50% - 67% Slope
-  67%+ Slope
-  Areas with public roads that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting
-  Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting

Land Status - Assembled from data provided by the Tongass National Forest and the Alaska Dept of Natural Resources (2007). Additional land management information was drawn from the USGS Protected Area Database for Alaska (2006).

Roads - Assembled from the Alaska Division of Forestry Southeast Area and Tongass National Forest Roads Inventories. Roads selected for exposure to public safety were those with a TNF Management Objective of 3 (suitable for passenger cars) or higher, with additional roads identified by the Landslides ST&C.









Slopes - Calculated using the 20 meter Digital Elevation Model developed by NASA Shuttle Radar Topography Mission (SRTM), 2000.



# SCOPING MAP Public Safety & Landslide Hazards Klawock Area

## Land Manager

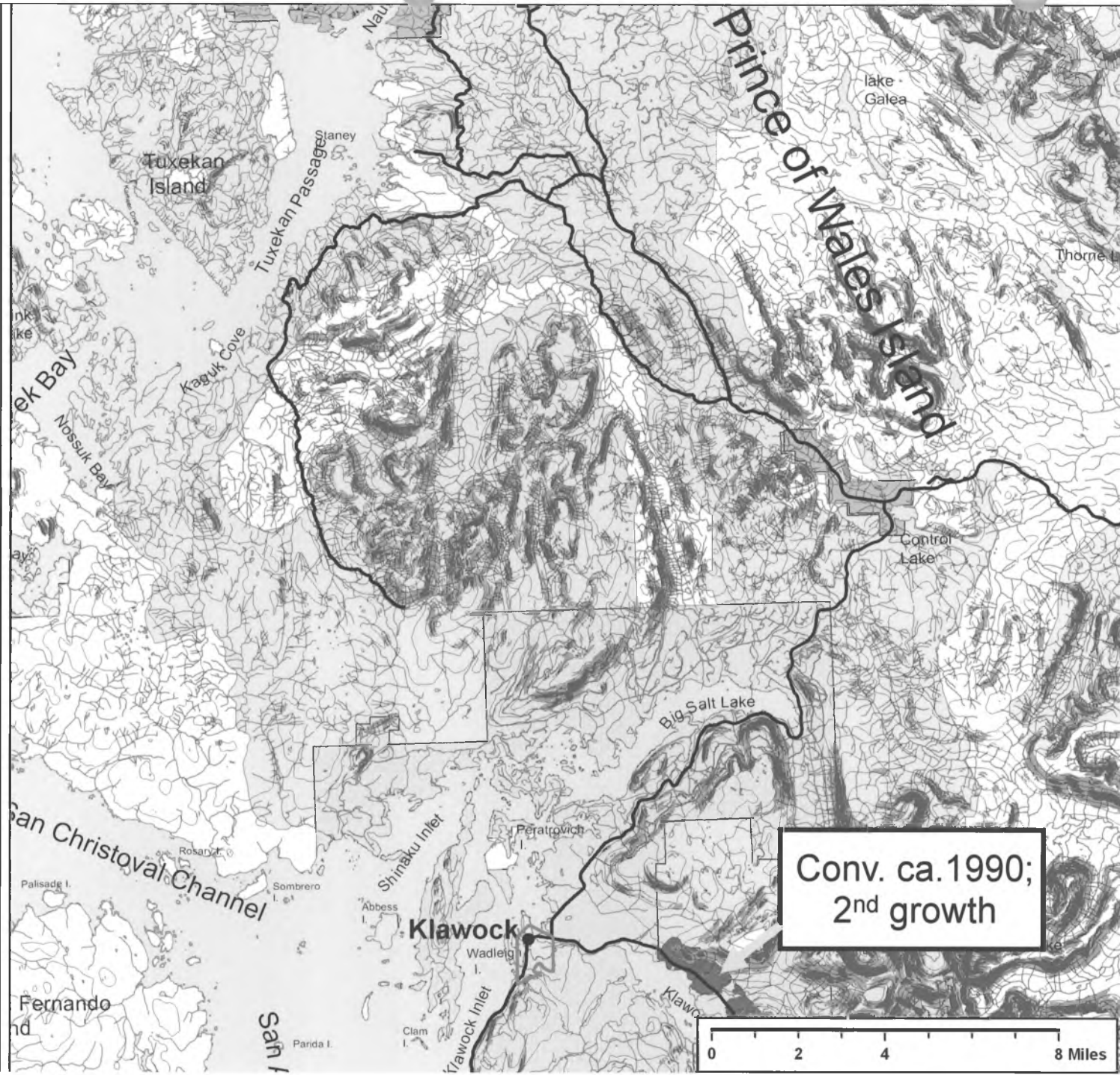
-  USFS
-  USFS - Natural Land Cover
-  State of Alaska
-  Mental Health Lands Trust
-  University of Alaska
-  ANCSA Corporation
-  Private/Local Government

-  USFS Documented Landslides (point)
-  USFS Documented Landslides (polygon)
-  Analysis Road
-  Other Forest Roads
-  50% - 67% Slope
-  67%+ Slope
-  Areas with public roads that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting
-  Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting

Land Status - Assembled from data provided by the Tongass National Forest and the Alaska Dept of Natural Resources (2007). Additional land management information was drawn from the USGS Protected Area Database for Alaska (2006).

Roads - Assembled from the Alaska Division of Forestry Southeast Area and Tongass National Forest Roads Inventories. Roads selected for exposure to public safety were those with a TNF Management Objective of 3 (suitable for passenger cars) or higher, with additional roads identified by the Landslides ST&C.









Slopes - Calculated using the 20 meter Digital Elevation Model developed by NASA Shuttle Radar Topography Mission (SRTM), 2000.



**SCORING MAP  
Public Safety &  
Landslide Hazards  
Craig Area**

**Land Manager**

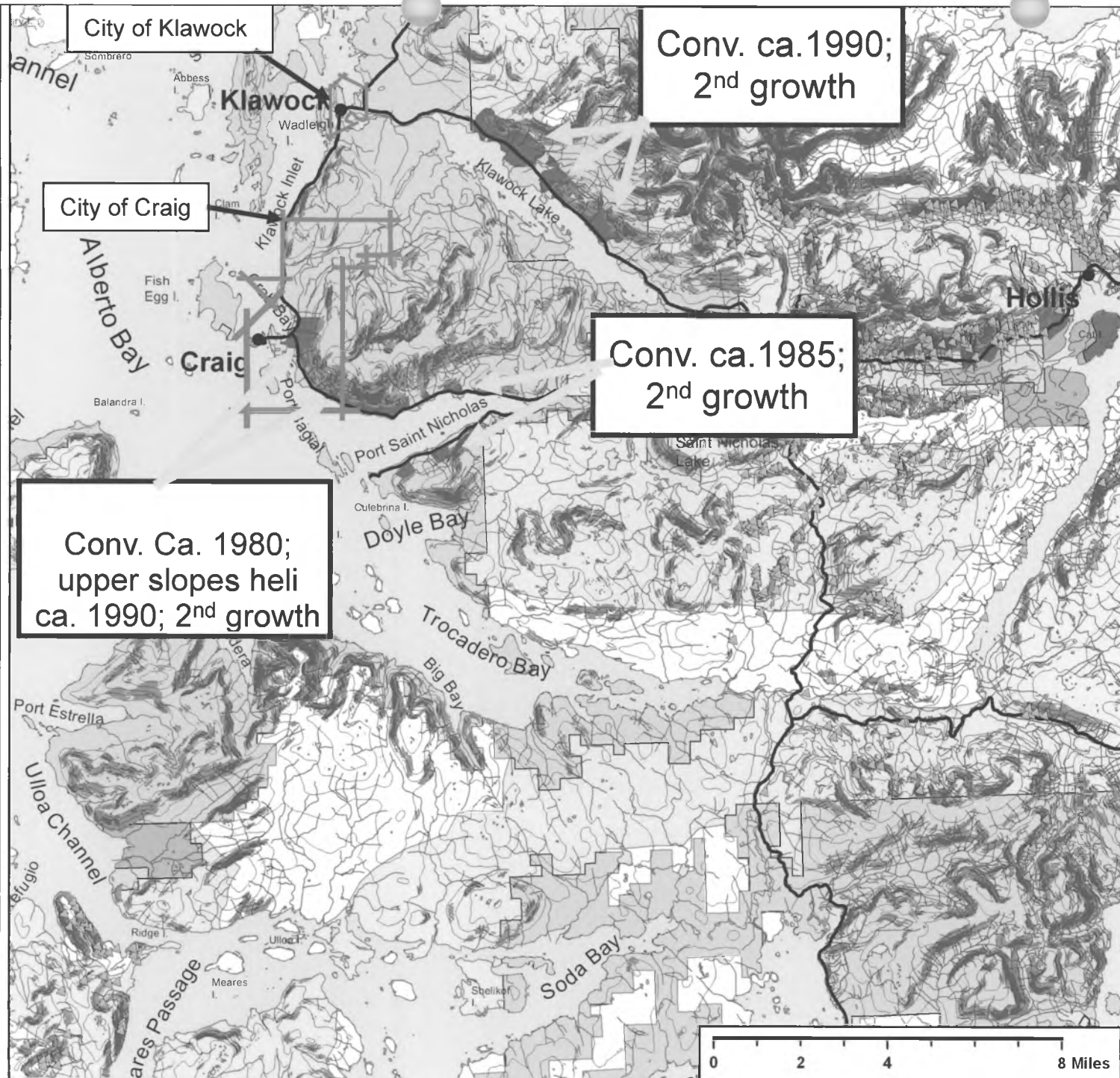
-  USFS
-  USFS - Natural Land Cover
-  State of Alaska
-  Mental Health Lands Trust
-  University of Alaska
-  ANCSA Corporation
-  Private/Local Government

-  USFS Documented Landslides (point)
-  USFS Documented Landslides (polygon)
-  Analysis Road
-  Other Forest Roads
-  50% - 67% Slope
-  67%+ Slope
-  Areas with public roads that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting
-  Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting

Land Status - Assembled from data provided by the Tongass National Forest and the Alaska Dept of Natural Resources (2007). Additional land management information was drawn from the USGS Protected Area Database for Alaska (2006).



Roads - Assembled from the Alaska Division of Forestry Southeast Area and Tongass National Forest Roads Inventories. Roads selected for exposure to public safety were those with a TNF Management Objective of 3 (suitable for passenger cars) or higher, with additional roads identified by the Landslides ST&C.









Slopes - Calculated using the 20 meter Digital Elevation Model developed by NASA Shuttle Radar Topography Mission (SRTM), 2000.



**SCOPING MAP  
Public Safety &  
Landslide Hazards  
Coffman Cove Area**

**Land Manager**

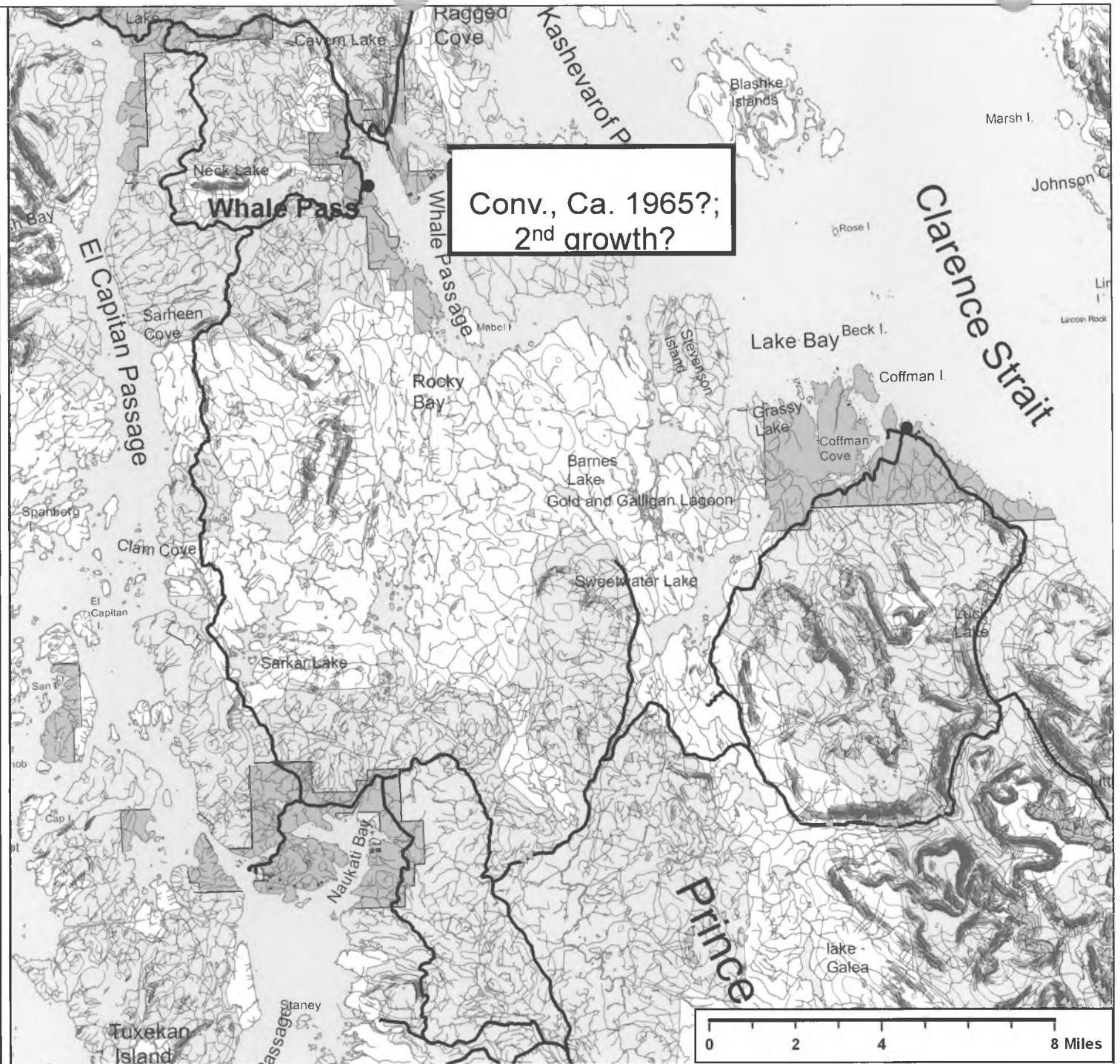
-  USFS
-  USFS - Natural Land Cover
-  State of Alaska
-  Mental Health Lands Trust
-  University of Alaska
-  ANCSA Corporation
-  Private/Local Government

-  USFS Documented Landslides (polygon)
-  USFS Documented Landslides (point)
-  Analysis Road
-  Other Forest Roads
-  50% - 67% Slope
-  67%+ Slope
-  Areas with public roads that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting
-  Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting

Land Status - Assembled from data provided by the Tongass National Forest and the Alaska Dept of Natural Resources (2007). Additional land management information was drawn from the USGS Protected Area Database for Alaska (2006).

Roads - Assembled from the Alaska Division of Forestry Southeast Area and Tongass National Forest Roads Inventories. Roads selected for exposure to public safety were those with a TNF Management Objective of 3 (suitable for passenger cars) or higher, with additional roads identified by the Landslides ST&C.









Slopes - Calculated using the 20 meter Digital Elevation Model developed by NASA Shuttle Radar Topography Mission (SRTM), 2000.



# SCORING MAP Public Safety & Landslide Hazards Hollis Area

## Land Manager

-  USFS
-  USFS - Natural Land Cover
-  State of Alaska
-  Mental Health Lands Trust
-  University of Alaska
-  ANCSA Corporation
-  Private/Local Government

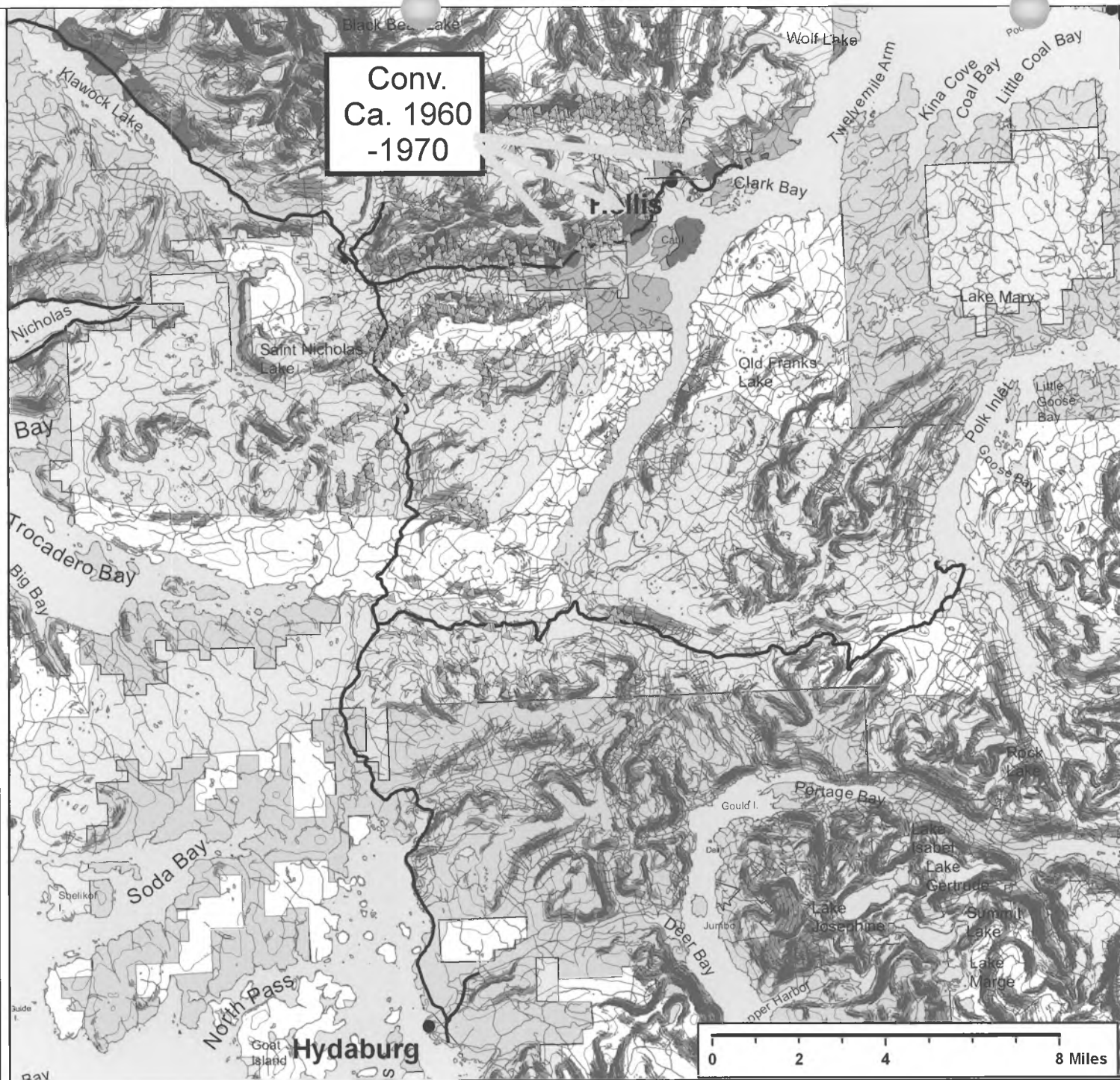
-  USFS Documented Landslides (point)
-  USFS Documented Landslides (polygon)
-  Analysis Road
-  Other Forest Roads
-  50% - 67% Slope
-  67%+ Slope
-  Areas with public roads that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting
-  Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting

Land Status - Assembled from data provided by the Tongass National Forest and the Alaska Dept of Natural Resources (2007). Additional land management information was drawn from the USGS Protected Area Database for Alaska (2006).

Roads - Assembled from the Alaska Division of Forestry Southeast Area and Tongass National Forest Roads Inventories. Roads selected for exposure to public safety were those with a TNF Management Objective of 3 (suitable for passenger cars) or higher, with additional roads identified by the Landslides ST&C.

Slopes - Calculated using the 20 meter Digital Elevation Model developed by NASA Shuttle Radar Topography Mission (SRTM), 2000.









Conv.  
Ca. 1960  
-1970



# SCORING MAP Public Safety & Landslide Hazards Ketchikan Area

## Land Manager

-  USFS
-  USFS - Natural Land Cover
-  State of Alaska
-  Mental Health Lands Trust
-  University of Alaska
-  ANCSA Corporation
-  Private/Local Government

-  USFS Documented Landslides (point)
-  USFS Documented Landslides (polygon)
-  Analysis Road
-  Other Forest Roads
-  50% - 67% Slope
-  67%+ Slope
-  Areas with public roads that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting
-  Areas with public roads and residential or commercial buildings that are within a 1/2-mile downhill from slopes >50% that have forests that are open to commercial harvesting

Land Status - Assembled from data provided by the Tongass National Forest and the Alaska Dept of Natural Resources (2007). Additional land management information was drawn from the USGS Protected Area Database for Alaska (2006).

Roads - Assembled from the Alaska Division of Forestry Southeast Area and Tongass National Forest Roads Inventories. Roads selected for exposure to public safety were those with a TNF Management Objective of 3 (suitable for passenger cars) or higher, with additional roads identified by the Landslides ST&C.

Slopes - Calculated using the 20 meter Digital Elevation Model developed by NASA Shuttle Radar Topography Mission (SRTM), 2000.



White Paper on Landslides, Public Safety, and the Alaska Forest Resources  
& Practices Act (FRPA) for Discussion at the July 2008 Board of Forestry  
meeting  
June 18, 2008

**Background.** The Mitkof Highway Homeowners Association (MHHA) requested that the FRPA be amended to address public safety hazards associated with slope failures. MHHA specifically requested the following addition to the FRPA:

*“Activities that increase susceptibility to slope failures (such as logging) should be prohibited or restricted if slope failures pose a danger to life or property. Critical facilities, homes, and other buildings for human occupancy should not be located in areas susceptible to major slope failure.”*

The FRPA currently requires that adverse impacts of mass wasting be prevented or minimized, but its authority is limited to impacts on water quality and fish habitat. Forest practices acts in some states add public safety to the considerations for addressing mass wasting.

The MHHA concerns were initially based on proposed forest operations on Mitkof Island above the Mitkof Highway. Similar situations may exist in some other areas, but are limited to areas with a combination of commercial timber, steep topography, unstable soils, land ownership where logging may occur, and human occupancy. The occurrence of high-risk sites may increase as residential areas expand near past and current logging sites. Mass wasting risks associated with activities other than commercial timber harvesting are outside the authority of FRPA (e.g., utility lines, non-timber road construction, or other land clearing activities).

**Current FRPA standards and best management practices (BMPs) regarding mass wasting.** The Forest Resources & Practices Act and regulations include the following standards and BMPs.

- On state, municipal, and private land, significant adverse effects of mass wasting on water quality and fish habitat shall be prevented or minimized (AS41.17.060(b)(5)).
- Include information on known unstable or slide-prone slopes, and site-specific erosion prevention measures in Detailed Plans of Operation (11AAC95.220(a)(9))
- A Change of Operations notification needs to be submitted for changes to proposed operations on unstable slopes (11AAC95.230(a)(1))
- In Region I, slope stability standards apply along anadromous waters and their tributaries. In these areas, operators must
  - Avoid constructing a road that will undercut the toe of a slope that has a high risk of slope failure;
  - Leave low-value timber where prudent along the riparian areas of tributaries to anadromous streams;
  - Use full or partial suspension yarding;
  - Fall timber away from streams in V-notches; and

drainage, precipitation, and potential impacts. (Tongass Forest Plan, Jan. 2008, p. 4-65)

- Oregon State forest practices regulations include:
  - A screening process for identifying areas with high landslide hazards and exposed populations (OAR 629-623-0100) and categories for degrees of landslide potential and potential risk to public safety (OAR 629-623-0200 and -0300)
  - Guidelines for operations in different risk categories. In the areas with the highest slide potential and greatest public safety risk,
    - harvesting is not allowed unless “a geotechnical report demonstrates to the State Forester that any landslides that might occur will not be directly related to forest practices because of very deep soil or other site-specific conditions.
    - Operators must leave trees adjacent to high landslide hazard locations to reduce the likelihood of trees retained in these locations blowing down.
    - New road construction is prohibited. Road reconstruction is allowed if it will reduce landslide hazard. (OAR 629-623-0400)
  - Less restrictive requirements in areas with intermediate risks (OAR 629-623-0500 and -0550)
  - Along debris torrent-prone streams, a requirement to fell and yard in ways to minimize slash and other debris accumulation where there is substantial or intermediate public safety risk, remove slash from channels, and leave large standing trees along depositional reaches. (OAR 629-623-0600)
  - A requirement that operators submit a written plan for all timber harvesting or road construction in areas with intermediate or substantial public safety risk. (OAR-629-623-0700)
  
- Washington State has a State Environmental Policy Act (SEPA). SEPA gives state agencies the ability to condition or deny a proposal due to identified likely significant adverse impacts.
  - In areas with potentially unstable slopes or landforms, determination of whether a state environmental impact statement (SEIS) is required is based in part on “the likelihood of delivery of sediment or debris to any public resources, or in a manner that would threaten public safety” (WAC 222-10-030), and on whether the proposed harvest is consistent with an approved watershed analysis (WAC 222-16-050)
  - Specific mitigation measures must be designed to avoid accelerating rates and magnitudes of mass wasting that could threaten public safety. (WAC 222-10-030).
  - Definitions of potentially unstable slopes or landforms are provided. (WAC 222-16-050)
  - Guidelines for evaluating potentially unstable slopes and landforms are included. (2004 Board Manual).

**Recommendations for Board discussion.** The Division of Forestry recommends that the Board of Forestry convene a science and technical committee group to review the current mass wasting standards, and if appropriate, draft language for presentation to the Board of Forestry. The committee should consider the following items:

- Including public safety in the factors to consider for preventing or minimizing adverse impacts of mass wasting. This would require a statutory change.
- Defining the following terms and providing guidance for determining where these conditions exist:
  - “unstable or slide-prone slope”,
  - “slope that has a high risk of slope failure”
  - “fill material prone to mass wasting”.

This would require a regulatory change.

- Providing guidance for determining where a public safety risk exists, e.g., combination of unstable slopes and human occupancy/use in potential slide path. This would require a regulatory change.
- Developing additional BMP(s) for harvesting and yarding methods in unstable or slide-prone areas. This would be a regulatory change.

DOF does not recommend adding language on location of structures to FRPA – FRPA applies only to commercial forestry operations.

A Science & Technical Committee would need to include representatives with expertise in the following areas and representatives of the state resource agencies responsible for implementing FRPA.

- Hydrology
- Geology
- Soil science
- Forest management
- Logging engineering
- Fish biology
- DNR Division of Forestry
- DEC Division of Water
- ADF&G Habitat Division

Recommendations from the Science & Technical Committee would be forwarded to the Board and, if appropriate, to an Implementation Group with representatives from state resource agencies, forest landowners, local governments, homeowners, and other affected interests.

# White Paper on Landslides, Public Safety, and the Alaska Forest Resources & Practices Act (FRPA)

## Updated January , 2010

In response to a request from the Board of Forestry, this document summarizes the history of the forest landslide and public safety issue in Alaska, the results of the geographic scoping process, existing FRPA standards regarding mass wasting, and approaches used in other west coast states, British Columbia, and the Tongass National Forest.

### **I. Background**

In October, 2007, the Mitkof Highway Homeowners Association (MHHA) requested that the FRPA be amended to address public safety hazards associated with slope failures. MHHA specifically requested the following addition to the FRPA:

*“Activities that increase susceptibility to slope failures (such as logging) should be prohibited or restricted if slope failures pose a danger to life or property. Critical facilities, homes, and other buildings for human occupancy should not be located in areas susceptible to major slope failure.”*

The FRPA currently requires that adverse impacts of mass wasting be prevented or minimized, but its authority is limited to impacts on water quality and fish habitat. Forest practices acts in some states have added public safety to the considerations for addressing mass wasting.

### **II. Scoping model and results**

The MHHA concerns were initially based on proposed forest operations on Mitkof Island above the Mitkof Highway. The Board of Forestry asked for an assessment of the geographical extent of this issue.

The Landslide Science & Technical Committee developed a model and scoping maps to identify areas where risks may occur based on topography, forest cover, land management, and proximity to public roads and areas with residential or commercial buildings.

- The scoping maps are tools for assessing the general scope of landslide hazards and public safety risks associated with commercial timber harvesting subject to FRPA<sup>1</sup>. They do not replace the need for site-specific analysis and design of timber sales and access roads.
- The scoping model is a first approximation based on available data of the geographic extent of potential landslide hazards in areas open to commercial timber harvest operations subject to FRPA where there is public use, in the portion of coastal Alaska from Cordova south.

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<sup>1</sup> Mass wasting risks associated with activities other than commercial timber harvesting (e.g., utility lines, non-timber road construction, or other land clearing activities) are outside the authority of FRPA and are not addressed by the scoping model.

- Fall timber away from streams in V-notches; and
- Avoid sidecasting soil. (11 AAC 95.280)
- Avoid locating forest roads on slopes >67%, on unstable slopes, or in slide-prone areas. If avoidance is not feasible, site-specific measures must be approved by DOF and must
  - Balance cuts and fills, but not use fill that is unstable, fine-textured, or prone to mass wasting;
  - Minimize cuts in fine-textured soils;
  - Not bury log chunks, organic debris, or slash in the load-bearing portion of a road fill; and
  - Not excavate or blast during saturated soil conditions if mass wasting is likely to result and degrade water quality. (11AAC95.290(a), (b))
- Use end-hauling and full-bench construction if mass wasting is likely to occur and cause degradation of water quality. (11AAC95.290(d))
- Fell trees away from surface waters and standing waters, if not feasible remove tree and debris from surface waters (11AAC95.290(e), 11 AAC 95.355)
- Stabilize the slide path and exposed soils where mass wasting is caused by forest operations. (11AAC95.330)
- For a landing on a slope >67%, an unstable slope, or in a slide-prone area, keep fill material free of stumps and excessive slash, and compact fill to prevent mass wasting. A helicopter drop zone is considered a landing. (11AAC95.345(b)(4) and (d))
- Where feasible avoid crossing deep gullies where fine textured soils such as clay or ash soils exist (11 AAC 95.285(a)(9))
- Maintain bank integrity and prevent felled timber from entering surface waters (11 AAC 95.350).
- Design operation so yarding can be done in compliance with FRPA (11 AAC 95.340)
- Yarding up, down or across a V-notch channel must be accomplished in a manner that does not create significant erosion (11 AAC 95.360)
- Where downhill yarding is used, need to lift leading end and minimize downhill movement of slash and soils (11 AAC 95.360(c))
- Landowner shall reforest harvested land to the fullest extent practicable (11 AAC 95.375)
- "Mass wasting" is defined as the slow to rapid downslope movement of significant masses of earth material of varying water content, primarily under the force of gravity (11 AAC 95.900(44))

**C. "Gaps" in FRPA standards for landslides**

**Statutory**

- FRPA does not include public safety in the factors to consider for preventing or minimizing adverse impacts of mass wasting. This would require a statutory change.

**Regulatory**

**Note:** The following gaps exist currently and apply to prevention of impacts to fish habitat and water quality, as well as public safety.

- FRPA does not define the following terms nor does it provide guidance for determining where these conditions exist. Definitions would require a regulatory change.
  - “unstable or slide-prone slope”,
  - “slope that has a high risk of slope failure”
  - “fill material prone to mass wasting”.
- FRPA does not have BMPs for specific harvesting and yarding methods in unstable or slide-prone areas. This would be a regulatory change.
- FRPA does not have BMPs for helicopter operations or partial harvesting other than those noted above.

#### **IV. Overview of other west coast forest practices standards regarding mass wasting**

##### **A. Tongass National Forest**

Tongass National Forest standards and guidelines require

- the same standards as FRPA for slopes >67% (see 11 AAC 95.290(a) above);
- evaluation of potential mass wasting effects
- case-by-case review and approval of harvesting on slopes  $\geq 72\%$  based on an on-site analysis of slope and Class IV channel stability and potential impacts of accelerated erosion on fish habitat, other water uses, and other resources. The analysis should assess steepness, channel dissection, parent material, soil drainage, precipitation, and potential impacts. (Tongass Forest Plan, Jan. 2008, p. 4-65)

##### **B. State of Oregon**

Oregon forest practices regulations include:

- A screening process for identifying areas with high landslide hazards and exposed populations (OAR 629-623-0100) and categories for degrees of landslide potential and potential risk to public safety (OAR 629-623-0200 and -0300)
- Guidelines for operations in different risk categories. In the areas with the highest slide potential and greatest public safety risk,
  - harvesting is not allowed unless “a geotechnical report demonstrates to the State Forester that any landslides that might occur will not be directly related to forest practices because of very deep soil or other site-specific conditions.
  - Operators must leave trees adjacent to high landslide hazard locations to reduce the likelihood of trees retained in these locations blowing down.
  - New road construction is prohibited. Road reconstruction is allowed if it will reduce landslide hazard. (OAR 629-623-0400)

### **C. State of Washington**

Washington has a State Environmental Policy Act (SEPA). SEPA gives state agencies the ability to condition or deny a proposal due to identified likely significant adverse impacts.

- In areas with potentially unstable slopes or landforms, determination of whether a state environmental impact statement (SEIS) is required is based in part on “the likelihood of delivery of sediment or debris to any public resources, or in a manner that would threaten public safety” (WAC 222-10-030), and on whether the proposed harvest is consistent with an approved watershed analysis (WAC 222-16-050)
- Specific mitigation measures must be designed to avoid accelerating rates and magnitudes of mass wasting that could threaten public safety. (WAC 222-10-030).
- Definitions of potentially unstable slopes or landforms are provided. (WAC 222-16-050)
- Guidelines for evaluating potentially unstable slopes and landforms are included. (2004 Board Manual).

### **D. State of California**

In California, a Timber Harvest Plan (THP) must be approved by the Dept. of Forestry and Fire Protection prior to harvest of live trees.

- A THP must include identify unstable areas and avoid or mitigate hazards in such areas.
- THPs must include estimated erosion hazard ratings by areas down to 20 acres, and down to 10 acres for areas with high/extreme hazard ratings.
- A Road Management Plan submitted as part of a THP must identify issues regarding public safety that could be affected by road management activities.
- The state review team for a THP includes an engineering geologist who reviews the plan with respect to slope stability, and inspects sites if necessary. One purpose of site inspections is to look for public safety hazards. The geologist can recommend additional measures to reduce hazards to public safety.

The California Forest Practices Act (2009) doesn't directly address public safety, but actions under the FPA must be consistent with the California Environmental Quality Act, which does include public safety.

THPs are subject to interagency review and public hearings. THPs may not be approved until 35 days after filing unless the Director finds there will be no significant environmental damage or threat to public safety with a shorter approval period. The Board of Forestry will grant a hearing on an appeal of a THP from the Dept. of Fish & Game or State Water Resources Control Board if there are substantial issues with respect to the environment or public safety involving threats to the lives, health, or property of state residents.

Use of heavy equipment for tractor operations is

- Prohibited on
  - slopes >65%
  - slopes >50% with a high or extreme erosion hazard rating

- slopes >50% w/o flattening before reaching a watercourse or lake
- Limited to existing tractor roads that don't require reconstruction or THP-approved new tractor roads on slopes 50-65% with moderate erosion hazard rating
- Exceptions may be proposed in a THP with site-specific justification.

Mechanical timber harvesting (not including cable or helicopter yarding) shall not be conducted during a winter period (Nov. 15-April 1 in most areas) unless a winter period operating plan is incorporated in the THP and is followed, unless a Registered Professional Forester specifies the following winter operation measures in the THP:

- Tractor operations will be conducted only during dry, rainless periods where soils are not saturated,
- Erosion control structures are installed on all constructed skid trails and tractor roads prior to the end of the day if the U.S. Weather Service forecast is a "chance" (30% or more) of rain before the next day, and prior to weekend or other shutdown periods, and
- Site specific mitigation measures for erosion are established in riparian areas and unstable areas during THP preparation and review.

Decommissioned roads are inspected following the first bank-full storm event to ensure treatments are functioning to restore hillslope stability.

Sensitive watersheds may be identified for additional planning and protection measures. Designation as a sensitive watershed is based in part on risks to public safety.

#### **E. Province of British Columbia**

British Columbia's Forest and Range Practices Act covers tenuring (general licensing) for forest operations and permitting for individual harvest areas. Under the forest planning and practices regulations, a person carrying out a "primary forest activity" must ensure that the activity does not cause a landslide that adversely affects

- Soils
- visual quality
- timber
- forage
- water
- fish
- wildlife
- biodiversity
- recreation
- resource features
- cultural heritage resources

Primary forest activities are timber harvesting, silvicultural treatments, and road construction, maintenance, and deactivation.

The Minister of Forests and Range also has the power to intervene on any activity that is likely to have a catastrophic impact on public safety. The minister can stop the activity and require a remedy or mitigation.

**Forest Resources & Practices Act  
Landslide Science & Technical Committee (S&TC)  
Minutes -- Meeting #2 - April 1, 2009 Juneau**

**Attendees:** Greg Staunton, Pat Palkovic, Jim Baichtal, Kevin Hanley, Kyle Moselle, Dennis Landwehr, Adelaide (Di) Johnson, Marty Freeman. Ralph Swedell was absent.

**Agenda.** No changes

**February 10 Minutes.** Minor changes were made to consensus point C1, as follows.

**C1.** The scoping model and associated maps are tools for assessing the general scope of landslide hazards and public safety risks associated with forest operations. They do not replace the need for site-specific analysis and design of timber sales and access roads.

[Note -- edits were also made to Consensus Point C2 during subsequent discussions. See amended version on page 5.]

**Public and Board input.** Freeman handed out an excerpt from the draft minutes of the March 18-19 Board of Forestry meeting covering the briefing on the S&TC work to date, and Board discussion. In general, the Board was pleased with the progress made on scoping. The Board also clarified that the intent is to address issues of public safety risks to people rather than to infrastructure such as utility lines or roads.

Freeman also handed out a copy of a March 23, 2009 letter from Ed Wood of the Mitkof Highway Homeowners Association and attachments. The attachments include

- an affidavit from Robert Peterson about the location of Taain Creek,
- the 2006 Detailed Plan of Operations (DPO) for a timber harvest on Mental Health Trust land above the Mitkof Highway,
- a transmittal memo from the Division of Forestry to the Habitat Division accompanying the DPO
- a memo from the Department of Environmental Conservation to the Division of Forestry with comments on the DPO
- a letter from the California Board for Geologists and Geophysicists issuing a citation and fine to Craig Erdman
- Douglas Swanston's critique of the slope stability assessment by Craig Erdman
- Excerpts from the US Geological Survey Geologic Map of Southeastern Alaska Dept of Natural Resources
- Photos and a Geographic Information System (GIS) analysis of the 2004 Boulder Point landslide
- A map of land ownership and proposed timber harvest units along the Mitkof Highway.

Palkovic said that the statement attributed to her in footnote 21 of the letter is misleading. She clarified that landowners and operators have to comply with all relevant laws, and with forest practices requirements in the agency review comments on the FRPA Detailed Plan of

Operations. However, the agencies' do not have any existing authority over public safety issues under FRPA.

Freeman also reported that she received a call from a representative of Shaan-Seet asking that the S&TC include an assessment of the Craig and Port St. Nicholas area in the scoping process.

**Scoping map update.** Freeman reported that a second version of the landslide hazard maps has been completed for most of the study area. Revised maps for the Cordova, Haines, Hoonah, an Sitka areas are still in progress. Freeman summarized the changes to the draft scoping maps made following the recommendations from the first S&TC meeting. Hans Buchholdt is the GIS specialist for the Division of Forestry who is doing this work.

Major changes:

- Incorporating a 20-meter resolution digital elevation model (DEM). This DEM has better control than the prior USGS version.
- Adding a second slope category to cover 50-66% slopes in the potential initiation zone
- Showing the hazard area as a polygon downslope of potential initiation zones. The hazard area continues downslope until the ground levels and turns up, the flow path hits a 90-degree angle, or the flowpath hits water. Hazard polygons also stop at the boundary of a land-use category not open to harvesting because they are low public use areas.
- Road coverage was changed to include all roads monitored for public traffic by ADOT&PF, and US Forest Service (USFS) roads in Objective Maintenance Levels 3, 4, and 5 – these are roads maintained in a condition drivable by cars. (See handout for a description of maintenance levels.)
- Incorporating site-specific changes recommended by the S&TC at the February 10 meeting.

**Discussion of runout zones.** Landwehr and Johnson provided data (see handouts) on field measurements of landslides.

Landwehr's data are based on 162 slides, of which 108 were associated with timber harvest and road construction prior, and 54 were storm event slides. The average initiation angle for all slides was 70%, but initiation angles ranged from 22 to 170%. Storm event slides averaged 469 feet long, about 21% longer than slides from roads, rock pits, and harvest areas (ave. = 369 feet). Only three slides exceeded 2,000 feet, and one of these was more than a half-mile long. Landslides caused by road construction generally initiated on gentler slopes than slides associated with timber harvesting. Landwehr reported that there is no direct correlation between the initiation angle and either the acreage or length of the slide.

He also analyzed initiation angles from 115 landslides on POW. This group of slides did not include 60 landslides related to initial road construction. ~~A 50% and steeper initiation angle would include 93% of the 115 landslides. The 67% and steeper initiation angles would include 66% of the slides and the 72% and steeper initiation angle would include 49% of the landslides.~~ Landwehr noted that because we do not harvest a lot of timber on slopes over 72% and even less on steeper slopes, the upper end of the data set will always be lacking. Most productive timber growth – and therefore harvesting -- occurs between 30% and 90% gradients, so slides associated with timber harvest also occur primarily in that slope range.

Johnson described Johnson et al. (2000)<sup>1</sup> data compiled from a random sample of 45 landslides which include a mix of slides in old-growth, second-growth, and clearcuts. All the slides were associated with storm events. Initiation angles ranged from 44-96%, with a mean of 63%. More than half of the slides started on slopes  $\leq 62\%$ . She emphasized that the S&TC shouldn't just look at slopes greater than 62% for determination of landslide hazard areas. She recommended looking at gradients of 45% and up – that would include  $\geq 95\%$  of slides.

Four of the 45 slides (9%) traveled more than a half-mile. They ranged from 0.02 to 1.01 miles long. Johnson said that runout length is dictated by slope and junction angles of channels the slide travels into more than distance alone. She brought a copy of a 1990 paper by Lee Benda and Terrance Cundy<sup>2</sup>. Their model uses a 6% gradient for deposition slopes. Johnson et al., (2000) found that deposition slopes ranged from 4% to 33%, with a mean of 17%. Landslides in old-growth typically deposit on steeper slopes – they back up behind standing trees, downed trees and debris. Runout length of debris flows depends on whether a slide enters a creek, especially a 3<sup>rd</sup> order or larger channel – in these conditions, slides travel farther.

Landwehr noted that there are differences between the slides in his report and Johnson's. His study included slides associated with recent harvests and road construction – not all were from storm events. Johnson's study included a mix of cover types, but all were during a storm event. Some slides were included in both analyses. Slides in recent harvest areas are smaller on average than those in second-growth or old-growth. For the harvest area slides, 90% initiated on slopes  $> 52\%$ . Storm-event slides are typically bigger. Slides from road construction are generally smaller and are not a public safety hazard because they occur at a known point in time (during construction). Johnson noted that slides that start in old-growth areas may have longer runouts if they travel downslope into a clearcut, as the deposition slope of a landslide in a clearcut is generally lower..

These two analyses did not separate slides that were channelized vs. non-channel flow. All of the channel flow slides are in HC (high-gradient contained) channels, usually in TLMP Class 3 or some Class 4 channels. Class 4 channels won't increase flow much. Class 3 streams are larger –  $\leq 5$  feet wide and incised 15 feet or more.<sup>3</sup>

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<sup>1</sup> Johnson, A.C., Swanston, D., and McGee, K., Landslide initiation, runout and deposition within clearcuts and old-growth forests of Alaska, *Journal of the American Water Association*, 36(1): 17-30.

<sup>2</sup> Benda, L.E., and T. W. Cundy. 1990. Predicting deposition of debris flows in mountain channels. *Canadian Geotechnical Journal*. Volume 27, Number 4. pp 409-417.

<sup>3</sup> Class III and IV streams are defined in TLMP as follows.

**Class III:** Perennial and intermittent streams with no fish populations but which have sufficient flow, or transport sufficient sediment and debris, to have an immediate influence on downstream water quality or fish habitat capability. For streams less than 30% gradient, special care is needed to determine if resident fish are present. A stream segment is designated Class III if the following conditions are met **for the majority of its length:** Bankfull stream width greater than 1.5 meters (5 feet) **and** channel incision (or entrenchment) greater than 5 meters (15 feet). Streams that do not meet both the width and incision criteria may be classified as Class III streams based on a professional interpretation of stream characteristics for the stream segment being assessed. The following characteristics **could** indicate a Class III stream:

- a. Steep side-slopes containing mobile fine sediments, sand deposits, or deep soils that can provide an abundant source area for sedimentation.
- b. Very steep gradient channels (greater than 35 percent slope).

**Minutes**  
**FRPA Phase 2 Landslide Science & Technical Committee (S&TC)**  
**Meeting #3 – November 23, 2010**  
**Web meeting – Juneau, Ketchikan, Thorne Bay**

**S&TC Attendees:**

Ketchikan: Bert Burkhart, Dennis Landwehr, and Pat Palkovic

Juneau: Marty Freeman, Kevin Hanley, Adelaide (Di) Johnson, and Kyle Moselle

Thorne Bay: Jim Baichtal and Greg Staunton

There were no visitors.

**Minutes.** The minutes from the November 1 were adopted incorporating minor changes.

**Bibliography.** Moselle reviewed literature relevant to landslide effects on fish habitat. The following papers are already included in the Landslide S&TC bibliography:

- Gomi, T., R.C. Sidle, and D.N. Swanston. 2004. Hydrogeomorphic linkages of sediment transport in headwater streams, Maybeso Experimental Forest, southeast Alaska. *Hydrological Processes*. 18: 667-683.
- Gomi, T., R.C. Sidle, M.D. Bryant, and R.D. Woodsmith. 2001. The characteristics of woody debris and sediment distribution in headwater streams, southeastern Alaska. *Canadian Journal of Forest Research*. 31: 1386-1399.
- Gomi, T., R.C. Sidle, R.D. Woodsmith, and M.D. Bryant. 2003. Characteristics of channel steps and reach morphology in headwater streams, southeast Alaska. *Geomorphology*. 51: 225-242.
- Johnson, A.C., D.N. Swanston, and K.E. McGee. 2000. Landslide initiation, runout, and deposition within clearcuts and old-growth forests of Alaska. *Journal of the American Water Resources Association*. 36: 17-30.
- Cederholm, C.J., and L.M. Reid. 1987. Impact of forest management on coho salmon (*Oncorhynchus kisutch*) populations of the Clearwater River, Washington: A project summary. In: *Streamside Management: Forestry and Fishery Interactions*. Proceedings of a symposium held at University of Washington, 12-14 February 1986, Seattle. E.O. Salo and T.W. Cundy, Editors. Institute of Forest Resources, Seattle, Washington, Contribution No. 57. Pages 373-398.

In addition, Moselle recommended including the following papers:

- For Miscellaneous Section: Bash, J. C. Berman, and S. Bolton. 2001. Effects of turbidity and suspended solids on salmonids. Univ. of Washington Center for Streamside Studies. Washington State Dept. of Transportation Technical Report WA-RD 526.1. 74 pp.

## “Frequently dissected slopes”

At the last meeting, there was a discussion of whether we need a more specific definition of “frequently dissected slopes.” Johnson reviewed the literature and talked with Doug Swanston on this issue. She said the “frequently” begs for a number definition, and suggested that it would be better to just say, “dissected slopes.” In the literature, the references are often to both frequency and magnitude of dissections. For example, a deep gully with many feeder hollows may have a history of slides and chronic failures. Where there are many shallow incisions, lower magnitude slides often occur. We just need to note gullies and potential contributing areas from hollow and dissections. There is no good way to specify something like an area with “eight dissections per ½-mile is unstable.”

Landwehr generally agreed. He noted that the guide by Chatwin et al., 1994<sup>1</sup> refers to “dissected” or “highly-dissected” slopes but doesn’t provide any quantitative measure.

Johnson said that the indicator is incised slopes, whether or not flowing water is present. Burkhart observed that 80% of Southeast Alaska slopes would fit that category. Johnson agreed that it could be a huge area. She also noted that Swanston said that the 50% gradient suggested in the indicators should be lowered to 45% in protection of public safety is the goal. Moselle said that such a change could be the difference between a 90% and 95% confidence level, and didn’t see the need to change it to a 45% gradient.

Baichtal asked how “frequently” is currently defined by the USFS. Landwehr said that the Alaska Region landform guide uses 10 dissections/mile, or an interfluvial distance <500’. However, that standard was developed as a hydrologic indicator for mapping, not necessarily for assessing landslide potential. Landwehr suggested a distance of ≤200-250’ or tree height between dissections for a definition of “frequently” for identifying unstable terrain. He added that the Chatwin, et al. 1994 guide has photographs of highly dissected slopes – we could use that as a reference.

Johnson said that Taain Creek on Mitkof Island has failed repeatedly due to multiple hollows, but the slope isn’t highly dissected.

Hanley referred back to the suggestion that if you can’t split-yard away from a dissection, it’s an indicator of a highly dissected area. He prefers “highly dissected” to “frequently dissected.”

Burkhart asked whether it is primarily roads or yarding that cause failures on dissected slopes. Landwehr answered that it can be either one, especially where there are deep till soils on a slope gradient >50%. On unstable terrain with helicopter yarding, the problem areas would be on steeper

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<sup>1</sup> Chatwin, S. C., D. E. Howcs, J. W. Schwab, and D. N. Swanston. 1994. A guide for management of landslide-prone terrain in the Pacific Northwest. 2<sup>nd</sup> ed. British Columbia Ministry of Forests and U.S. Forest Service. 218 pp.

## **Douglas N. Swanston, Ph.D., CPG**

Dr. Swanston has more than 46 years experience in applications of engineering geology to land use planning and analysis and mitigation of the effects of geologic processes on urban and rural land use, a major portion of it gained in western Canada and coastal and interior Alaska. For 35 years (1962-1997), Dr. Swanston led a United States Forest Service engineering geology and slope stability research program. This program established goals, set priorities, and guided research on the influence of road construction, facilities development, and federal management practices on mass erosion and sediment transport in the Pacific Northwest and Alaska. From 1983 to 1988, Dr. Swanston served as a member of the Committee on Ground Failure Hazards Mitigation, National Academy of Sciences, National Research Council. This committee developed criteria and recommendations for identification, control, and correction of ground failure hazards (landslides and subsidence) in urban areas of the United States. From 1998 to 2002, Dr. Swanston was a partner in BRD Consultants, L.L.C. providing civil and geological engineering services and stability hazard analysis to central and southeast Alaska and the North Pacific Coast. He retired in 2003. Dr. Swanston has published more than 80 scientific articles in books and professional geology and engineering journals.

**FINAL MINUTES**  
**Board of Forestry Meeting**  
**Tuesday-Wednesday, February 12-13, 2008**  
**DNR Office Building, 3700 Airport Way, Fairbanks**

**Introduction**

**Call to Order and Roll Call.** Chairman Maisch called the meeting to order at 8:42 a.m. Fairbanks and Juneau conference rooms were connected. Board members present were Rob Bosworth, Matthew Cronin, Jack DiMarchi, Erin McLarnon, Wayne Nicolls, Rick Rogers, and Nathan Soboleff for Ron Wolfe. Bill Oliver was absent. A quorum was present.

**Public Meeting Notice.** The meeting was noticed by issuing public service announcements and press releases, mailing announcements to interested parties, and posting a notice on the state and Department of Natural Resources (DNR) websites (*see handout*). DOF has been investigating teleconferencing options. There are still two issues – first, using freeteleconference.com means that the cost for the state phone lines double because the service is not through the state's contract provider. Second, the Attorney General's Office has raised an issue over charging people to participate in a Board meeting. For this meeting, the call-in number is through the state system as in the past, and presenters are provided with access to the teleconference call-in number.

**Approval of agenda.** (*See handout*) The agenda was unanimously approved subject to possible changes due to Dave Albert being stuck in Juneau by weather.

**Approval of Minutes.** The Board reviewed and unanimously approved the October 9, 2007 minutes with one minor correction. (*see handout*)

**Announcements.**

- The Tongass Futures Roundtable winter meeting will be in Juneau on February 27-28 at the Mendenhall Visitors Center.
- The State Society of American Foresters meeting will be March 27-29 in Juneau, all are welcome, and the Governor is scheduled to be the banquet speaker.
- The Alaska Forest Association spring meeting is March 6-8 in Juneau.

**Old Business**

**FY09 budgets.**

**DNR Forest Practices budget.** Maisch described the proposed operating and capital (CIP) budgets for the Division of Forestry (*see handout*). DNR has submitted an increment request for addition General Fund money to offset FY09 decreases in federal Section 319 money for Forest Resources & Practices Act (FRPA) implementation. This would move \$85,000 of Division of Forestry (DOF) funding and \$65,000 of Office of Habitat Management & Permitting (OHMP) funding from federal receipt authority to the state General Fund. Originally, FRPA implementation was funded solely by the state. When state funding decreased, federal 319 money helped support implementation, along with smaller inputs from other sources.

Nicolls commented that NASF is extremely important and influential for the US Forest Service. He noted that prior to Jeff Jahnke's tenure as State Forester, Alaska didn't participate much. Maisch concurred, and added that it's an organization that likes to get things done. It includes the state and territorial foresters. There are three subregions; Alaska is part of the Western Forestry Leadership Coalition.

**Note:** Ron Wolfe joined the meeting on-line; Nathan Soboleff stepped down. Ed Wood from the Mitkof Highway Homeowners Association also joined on-line, along with Dave Beebe from Petersburg.

**FRPA standards re landslides and public safety.** Marty Freeman summarized questions and discussion to date with respect to FRPA standards on mass wasting and public safety.

The Mitkof Highway Homeowners' Association (MHHA) raised concerns over risks to public safety from proposed timber harvesting on Mental Health land on Mitkof Island. The Mental Health Trust and its operator, Alcan Alaska Timber Corporation, submitted a DPO for operations. Based on review of the DPO and maps, and field inspection by DOF and OHMP, and subject to the agencies' comments, proposed operations would be consistent with the Act and regulations. No operations have occurred to date. Prior to operations, a renewal notice must be submitted, or if changes are proposed to the original DPO, a Change in Operations must be submitted. No renewal notice or Change in Operations has been received at this time.

MHHA has requested that the following statement be added to FRPA:

*"Activities that increase susceptibility to slope failures (such as logging) should be prohibited or restricted if slope failures pose a danger to life or property. Critical facilities, homes, and other building for human occupancy should not be located in areas susceptible to major slope failures."*

Three questions were raised at the October 9 Board meeting.

1. Can consideration of public safety be included in reviews of compliance with the FRPA and regulations? No, per consultation with the Attorney General's Office, the existing act does not provide the authority to address public safety issues.
2. Can a consideration of public safety be added to the Act or regulations? Per consultation with the Attorney General's Office, adding standards for public safety would require a statutory change to the Forest Resources & Practices Act. Regulations on public safety could not be adopted without a change to the Act.
3. Do other authorities apply to public safety hazards from forestry operations? Yes – common law principles with respect to harm caused through negligence would apply. Also, local government with planning powers could adopt ordinances under Title 29 addressing public safety or use planning and zoning powers to address land use issues. Mental Health Trust operations would be subject to local ordinances.

Maisch added that the Division looked at the Oregon and Washington forest practices statutes. Both states added specific language on public safety in landslide hazard areas to their forest

practices acts in recent years. Options for Alaska include local government action through ordinances, or adding language on public safety in landslide hazard areas to FRPA. If a FRPA change is undertaken, Maisch recommended doing it through a science and technical committee process. Opening the Act isn't taken lightly; there's always a risk of other changes, but we have been able to prevent that in the past. A public safety amendment would be new ground.

Rogers said that this is an interesting issue. The Act now is not a permit program. It's hard to understand what the change would look like if the state were to decide whether a landowner could log a slope based on a risk assessment. It would make it more of a permit.

Freeman said that in Washington, a notification must be submitted that leads to a determination whether or not an environmental impact statement is needed under the State Environmental Policy Act. Oregon established a matrix of risk to public safety and likelihood of mass wasting. Associated standards include progressively more restrictive BMPs up to a prohibition on harvesting in the highest risk areas. Both state programs require a field visit by someone with expertise in landslide risk.

Rogers asked whether a change to FRPA would shift the burden of liability for risk from private landowners to the state. If so, would the state act in an ultra-conservative manner if it would be accountable if something goes wrong. That has big implications for the industry.

Cronin commented that this issue has been raised on Mental Health Trust land, but would apply to other lands, and could be extended to anything. This takes the forestry act and opens it to complaints about any impacts. The issue might be better left to the legal entities. Freeman noted that the Washington and Oregon considerations for public safety apply only to landslides, not to all forestry issues. Cronin concluded that he didn't feel qualified to comment because of the legal issues.

Bosworth asked about the status of the Mental Health logging proposal. Freeman said that their DPO had been approved, but no operations have occurred to date. The Mental Health Trust would have to submit a renewal notice or a Change of Operations before proceeding.

Wood reported that Mental Health Trust leaders were going to visit the Alaska Congressional delegation this month to determine whether there is sufficient support for a 20,000-acre exchange involving several parcels, not just the 2,600 acres on Mitkof. The proposal would address other places like Deer Mountain in Ketchikan. He said that Harry Noah, the Trust's executive director, said that if the exchange effort fails, they would revisit the timber option.

DiMarchi observed that this issue hasn't come up before because most of our logging is in remote areas. If it's unlikely to occur elsewhere, he doesn't think we want to reopen the bill to accommodate Mitkof, when they are also playing other cards.

Rogers commented that he doesn't want to get bogged down in the specifics of the Mitkof situation. However, it does illustrate the complexities. There are multiple professional opinions on the level of risk for this site. If DNR tries to assess risk, there is some subjectivity. The Board doesn't have specifics of what the landowner proposed. The Trust seems to be taking steps to mitigate the risk, and there is a difference of opinion on whether that goes far enough. Some risks are inherent whether or not harvesting occurs; human activities can exacerbate the

**MINUTES**  
**Board of Forestry Meeting**  
**Wednesday-Thursday, March 17-18, 2010**  
**Anchorage, Alaska**

**Wednesday, March 17**

**Call to Order and Roll Call.** Chairman Maisch called the meeting to order at 8:35 a.m. Anchorage and Fairbanks teleconference rooms were connected. All board members were present: Rob Bosworth, Jeff Foley, Erin McLarnon, Matt Cronin, Wayne Nicolls, Mark Vinsel, Ron Wolfe, and Eric Nichols.

**Public Meeting Notice.** The meeting was noticed by issuing public service announcements and press releases, mailing announcements to interested parties, and posting a notice on the state and Department of Natural Resources (DNR) websites. (*See handout*)

**Approval of agenda.** (*See handout*) The agenda was unanimously approved with a change of the speaker on the state of the timber industry and on the Sustainable Forestry Initiative from Owen Graham to George Woodbury, and a date correction on the prior meeting's minutes.

**Approval of Minutes.** The Board reviewed and unanimously approved the October 7-8, 2010 minutes with minor grammatical corrections. (*See handout*).

**Announcements.**

- Wolfe said that there is a hearing today in Washington D.C. on HR2099, the bill on the Sealaska land entitlement. Byron Mallott is the witness for Sealaska and testimony will be posted on the Sealaska website.
- Freeman reported that Society of American Foresters (SAF) policy is to grant continuing education credit for Board field trips, but not for meetings. SAF has evaluated the August BOF field trip at six Category 1 CFE credit hours. Thanks go to Jim LaBau from the Alaska SAF for help in getting credit approved.
- The joint Alaska Northern Forest Cooperative/SAF meeting will be held in Anchorage with a 2-day meeting and a 1-day field trip on April 29-May 1, 2010. DOF will send the agenda to the Board. The theme is on traditional and new views of forestry in Alaska. Andy Youngblood is completing a study on reforestation in the interior and may present it at the meeting. Wolfe asked that the Board's regards be sent to Youngblood.

**Old Business I**

**Proposed FY11 operating and CIP budgets; FY12 FRPA budget needs.** Kerry Howard, ADF&G Division of Habitat director reviewed the Habitat Division history (*see handouts*). Habitat management statutes go back to the late 1950s. The Sport Fish, Commercial Fisheries, and Game Division had habitat responsibilities before a separate Habitat Division was created. Peak staffing for the division occurred in the late 1970s to early 80s. In 2003, the Governor moved the division to DNR as the Office of Habitat Management and Permitting. At that time, the division's staff was reduced by 18%, and its budget was decreased 11%. The Division was moved back to ADF&G in 2008, and now has 47 positions in three regional offices and three area offices. Habitat Division recently closed the Petersburg office, and moved its functions to the Juneau office.

DOF consulted with the Attorney General's office, who advised us that public safety could be added to one section of the FRPA, e.g., AS 41.17.060(B) (5) without requiring that public safety be considered under the Act's other provisions.

DOF also prepared four documents (*see handouts*). The first is the revised text for the scoping map legend (*see handout*). The second is an update of the *White Paper on Landslides, Public Safety, and FRPA*. The update includes a summary of the science and technical committee findings, an expanded section on other approaches to this issue that includes British Columbia and California, and a section on authorities for public safety.

- British Columbia – The B.C. forest practices act does not specifically address public safety and landslides, however, the Minister of Forests and Range has the power to intervene on any activity that is likely to have a catastrophic impact on public safety. The minister can stop the activity and require a remedy or mitigation.
- California -- The state review team for a timber harvest plan includes an engineering geologist who reviews the plan with respect to slope stability, and inspects sites if necessary. One purpose of site inspections is to look for public safety hazards, and if appropriate recommend additional measures to reduce hazards to public safety. The California Forest Practices Act doesn't directly address public safety, but actions under the Act must be consistent with the California Environmental Quality Act, which does include public safety. Timber Harvest Plans are also subject to interagency review and public hearings. In addition,
  - Use of heavy equipment for tractor operations is prohibited on steep or erosive slopes.
  - Mechanical timber harvesting other than cable or helicopter yarding is prohibited in winter.
  - Site-specific exceptions may be made through an individual Timber Harvest Plan.
  - Sensitive watersheds may be identified for additional planning and protection measures; designation is based in part on risks to public safety.
- Authorities for public safety reside in multiple agencies and all levels of government. At the state level, at least nine departments have authority for certain aspects of public safety. Local governments (e.g., municipalities under AS 29) and federal entities (e.g., OSHA, Federal Highway Administration, and Homeland Security) also have public safety authorities.

The third document is a draft chart showing options for addressing public safety issues from landslides associated with commercial forest operations. Freeman prepared the draft and consulted with other agencies to make sure information on authorities was correct. DOF has not pulled together an Implementation Group to further identify options – before undertaking that effort, the Division wants to be sure that the Board needs additional information beyond the chart. An Implementation Group requires a significant commitment of time from agencies and private entities, and many of the options are outside FRPA authority. The Board could not pursue those options beyond making recommendations to the responsible entity.

Lastly, we prepared a draft decision tree showing four general paths for addressing FRPA-related portions of the public safety issue:

- I. Amending FRPA to add public safety to the considerations for preventing or minimizing adverse effects of erosion and mass wasting
- II. No change to FRPA; Amend the regulations to adopt definitions to clarify authorities and BMPs to minimize effects on fish habitat and water quality, e.g., BMPs for helicopter yarding, selective harvesting, etc.
- III. No change to FRPA or regulations. Initiate addition non-regulatory actions such as training.
- IV. No new FRPA-related action.

Under all options, existing BMPs would apply, along with civil liability, and opportunities to address safety issues through local ordinances.

Like the Board, the Division of Forestry has been seriously weighing the options for addressing this issue. At this time, the Division's preferred alternative would be Option II on the decision tree. This would update the FRPA regulations to clearly define key terms, including,

- o "unstable or slide-prone slope" (11AAC95.200(a)(9); .290(a),(b),(d)); .345(b)),
- o "slope that has a high risk of slope failure" (11AAC 95.280(d)(1)), and
- o "fill material prone to mass wasting" (11 AAC 95.290(b) (2)), .345(b) (4).

It would also establish BMPs for harvesting and yarding methods in unstable or slide-prone areas, possibly including requirements for helicopter operations or partial harvesting in these areas. We believe Option II is necessary to address gaps in the existing BMPs, which would not be addressed by options III or IV. It also retains FRPA's focus on resource management, although these changes for water quality and fish habitat would have side benefits for reducing public safety risks. Given the small footprint of populated areas in risk zones on the scoping map, and the variety of land use actions that could result in slide hazards in populated areas, we believe the public safety component of landslide hazards is best addressed through land use regulation authorities. Freeman noted that areas with potential for slides near Hollis, Whale Pass, Port St. Nicholas, and Klawock Lake are currently outside incorporated communities.

If the Board chooses Option II, DOF would convene a scientific and technical committee to recommend definitions and updates to the BMPs, followed by an implementation group to determine how to best implement the technical recommendations on the ground.

Maisch asked whether the potential slide area on Mitkof island is in the Petersburg borough. Ed Wood, Mitkof Highway Homeowners Association (MHHA), responded that Petersburg is a city, not a borough. Petersburg doesn't have land use regulations or zoning on that hillside yet. The city does have a hazard mitigation plan, and landslides are listed as the second priority for hazards, after downtown conflagration. Wood noted that the Board previously advocated for "one-stop shopping" rather than a collection of local ordinances to address this issue. Maisch recognized the value of "one-stop shopping", but noted that some local governments such as the Mat-Su Borough already have local zoning that affects forestry. Nichols said that is true for the Ketchikan Gateway Borough as well. Wolfe stated that "one-stop shopping" is a laudable goal, but forestry operations also have Title 16, resident fish, and US Coast Guard regulations to deal with.

Nichols said that Freeman and the committee have done an exceptional job of answering the questions that came up. There are numerous high-risk areas, and all have been harvested. He is not aware of public safety issues in the last 20 years associated with those harvests. There is one parcel that's unharvested, and it's involved in a potential trade with the Mental Health Trust. Even areas harvested in 1960 wouldn't be harvested for at least another 20 years.

Cronin asked what would happen if there was a forest operation on state land, and there was an accident with logs rolling off a truck and impacting private property. Maisch responded that there would be an Occupational Safety and Health Administration (OSHA) investigation, a check for negligence, and troopers would be involved if it were on a highway. An actual log truck to log truck accident with property damage was handled like any other accident on a public highway. If a fatality occurred, OSHA would definitely be involved. DOF dealt with one fatality on a logging road at a railroad crossing. Cronin asked what would happen if a forest practice involved some impact other than a landslide. Nichols replied that almost every major landowner, including the state, requires general liability insurance. If there's an accident, there is a determination of whether it was operator error or beyond the operator's control. Wolfe said that Sealaska even requires silviculture operators to have liability insurance. Vinsel asked whether a policy would still be in effect if something happened after logging.

concluded that training is important, but said that Option III doesn't get to where we need to go, especially with respect to helicopter logging which wasn't a common practice when FRPA adopted.

Cronin asked whether the second decision point on the tree operates under existing authority only. Maisch said yes.

Nichols said that in a landslide situation, if you have a public safety issue, you have already impacted water and fish. If you address water, fish, and landslides adequately it will address public safety issues associated with landslides. Cronin agreed that if you develop BMPs to protect water quality and fish habitat you will reach the same goal.

McLarnon asked whether the DPO has a check box for steep slopes. Nichols said there is a box— for unstable slopes. Freeman added that there are BMPs attached to areas with unstable or steep slopes. Nichols asked whether a check in the steep slope box warrants an on-the-ground inspection. Could that be a public safety check-box? Maisch said that it couldn't be a public safety check-off without a change to the Act. Nudelman said that seeing a check in the box does alert reviewers, and those operations typically get added scrutiny. DOF can't tell landowners they can't operate in those areas, but can make recommendations. In Icy Bay, for example, DOF recommended against an upper road, which the proposer pulled back.

Vinsel said that with the Mitkof Highway close to the road and the marine channel, fish migrate there. He agreed that threats to public safety also would affect fish.

Clark recounted that he has been on both sides of a DPO. As a DOF forester, he would want to do a prior inspection on a DPO with steep slopes and roading. As an operator, he would want DOF to come out as another set of eyes to check layout. He might also want to check with DEC. ADF&G may or may not want to come out.

Wood reported that there is only one salmon stream in the MHHA area and it is not in the MHT area. He said that he did ask Pat Palkovic, DOF forester, to come and check for public safety concerns and she declined to do that. Maisch said that it is correct that DOF couldn't consider public safety as part of the DPO. Wolfe said that there would still be water quality issues.

McLarnon wants to be sure that the Board's choice doesn't jeopardize a land exchange -- would rumors of a process affect the effort to go to the Legislature in the fall? Would Option II jeopardize a land exchange? Slenkamp said it would depend on what BMPs are written. The MHT proposed timber sale already implemented BMPs much beyond what DPO required. Risk is something the Trust deals with. If new BMPs reduce the amount of timber to be harvested, it would affect an exchange. Maisch said that the proposed exchange shouldn't be weighted too heavily. Wood commented that the MHT lands may not be valued higher in an appraisal, but they have a high political value.

Freeman clarified the process under Option II – DOF would convene a Science and Technical Committee which would make recommendations to the Board. If the Board believes the recommendations are on the right track, DOF would take them to an Implementation Group with representatives of the affected interests, including forest landowners, homeowners, timber industry, etc. The Implementation Group would be charged with figuring out how to make the science and technical recommendations work on the ground in a practical manner. The group's recommendations would be brought back to the Board for their review before deciding whether or not to proceed with the formal regulatory process. DOF wouldn't proceed with regulations on which the Board can't reach consensus.

Cronin suggested that if the agencies saw something going on that was counter to the law but not in their authority, they could notify whoever does have that authority. Option II is a good way to go, as long as problems identified are forwarded to whoever does that authority. Maisch noted that no entity currently has authority for this issue except for local governments, and they haven't taken that step in the Petersburg area. Cronin said that if FRPA has good BMPs for its authority, but citizens still have concerns, it's out of our hands. We're going in circles because we don't have the authority. Maisch noted that the issue for the Board is whether to request a statutory change to grant that authority to FRPA.

Nicolls observed that the Board is working hard to try not to amend the Act. Down the road there might be other safety things that might have us want to get into safety. Maisch noted that under in AS 41, DNR does have public safety responsibility for life and property with respect to wildland fire. Equipment safety issues are covered by OSHA. Nichols said that the two issues are the potential for slides and for impacts to water supplies. Hanley stated that drinking water supplies are covered by DEC. Wolfe commented that there is a narrow incidence of this problem.

Wolfe agreed that restrictions on harvest can affect land value. However, with the variation process the timber industry can get significant value out of riparian areas. We shouldn't ignore value – if harvest were to be prohibited, we would have to look at that. If changes put a private landowner in that position, they have changed the dynamics of FRPA.

Bosworth moved, and McLarnon and Nicolls seconded the following motion:

- ▶ **That the Board adopt Option II from the decision tree. McLarnon and Nicolls seconded.**

Nichols said that he wouldn't support Option II because he didn't know what direction the BMPs would take. He supported Option III with training for DOF. If the unstable slope box checked, a field visit should be required. He is willing to consider recommendations for BMPs before endorsing. Freeman clarified that Option II isn't a commitment to adopting regulations, but it is a commitment to draft proposed BMPs which would then come back to the Board for a recommendation on whether to proceed or not. Wolfe said that the Board needs to vote the motion up or down, or offer a friendly amendment clarifying that. The offeror and seconders accepted a friendly amendment to the following language.

- ▶ **That the Board adopt Option II from the decision tree. Option II is the process of drafting BMPs for review by the Board before deciding whether or not to proceed toward adopting them as regulations.**

Cronin asked whether there are other non-regulatory options besides training. Foley suggestion that there could be more inspections.

- ▶ **Motion unanimously adopted.**

Freeman said the next step would be convening a Science and Technical Committee to recommend appropriate BMPs. She asked for Board input on the types of expertise that are needed on the committee, and on individuals who can provide that expertise.

Nichols recommended including helicopter harvesting expertise, and recommended Columbia Helicopters.

Cronin asked whether there is a way of getting at taking issues if recommended BMPs would restrict landowners' ability to harvest timber. Maisch said that "taking issues" were addressed in developing the riparian buffers. Private landowners willingly donated that value for the greater good. Cronin said that

**DRAFT MINUTES**  
**Board of Forestry Meeting**  
**Tuesday-Wednesday, November 29-30, 2011**  
**DNR Large Conference Room, 3700 Airport Way, Fairbanks, AK**

NOTE: As of  
3/29/2012, no  
FINAL version of  
these Minutes had  
been posted on  
DOF website.

**Tuesday, November 29, 2011**

**Call to Order and Roll Call.** Chairman Chris Maisch called the meeting to order at 8:35 a.m. The Anchorage and Juneau teleconference sites were connected. Rob Bosworth, Jeff Foley, Erin McLarnon, Mark Vinsel, Ron Wolfe, Wayne Nicolls, and Eric Nichols were present and a quorum was established. Matt Cronin was absent.

**Public Meeting Notice.** The meeting was noticed by issuing public service announcements and press releases, mailing announcements to interested parties, and posting a notice on the state and Department of Natural Resources (DNR) websites. *(See handout)*

**Approval of agenda.** *(See handout)* The agenda was unanimously approved with adjustments on timing. Wolfe requested an opportunity for some updates on items raised at last meeting.

Matt Cronin joined by teleconference.

**Approval of Minutes.** The Board reviewed and unanimously approved the August 30-31, 2011 minutes with one typo correction. *(See handout)*

**Announcements.**

- Introduction of attendees. Wolfe welcomed Randy Bates, ADF&G Director of Habitat and hoped he would be able to attend some Board meetings in person.
- Maisch announced that the Alaska Timber Jobs Task Force will meet in Fairbanks December 1-2 with field trip to Superior Pellets, Dry Creek (Logging & Milling Associates), and Delta School wood boiler. Board members are welcome to attend.
- Vinsel recommended inviting Jeffrey Jones, Governor's Office special assistant for natural resources, to the next Board meeting. He said Jones has attended recent fisheries meetings and is enthusiastic about learning about other resources.
- Wolfe attended the November 2011 SAF annual meeting, and noted that the 40<sup>th</sup> anniversary of the federal Clean Water Act is next year. He would like the Board to have an information campaign on the success of FRPA in preventing nonpoint source pollution and protecting water quality.
- Bosworth asked for a report from Wolfe on the Juneau Economic Development Corporation (JEDC) economic cluster. Wolfe explained that the Obama administration came through Southeast Alaska with a transition plan and asset mapping. After that JEDC facilitated a series of cluster working groups for marine, tourism, timber, and renewable energy to identify assets and develop a strategic plan for each sector. The timber group continues to meet. Wolfe suggested a presentation at the winter Board meeting. The timber cluster work included an

Vinsel asked whether the Board would be acting outside its responsibility if members inserted themselves into a particular situation such that a landowner felt we were taking from their property to benefit a different landowner when the Board doesn't have public safety authority. Would Board members be liable in that case? Saxby replied that the analysis is the same regarding liability. The question is whether or not it would be legal. Legal issues would arise when the Dept. of Law reviews draft regulations for legality before they are published. The regulation attorney would determine whether there is legal authority to adopt the regulation. If not, it wouldn't go forward.

A Board member (*source?*) noted that the S&TC and IG input provides good forestry information. Where do we direct these citizens go who are asking for help? Maisch said that the Board's previous recommendation was that it was a local government issue. He noted that the City of Petersburg also discussed the landslide safety issue on Mitkof Island previously and did not reach agreement on how to approach it. Jandreau noted that there are some residences that are not in organized municipalities. Maisch agreed, although the Mitkof area is in a municipality. Other examples of municipal safety ordinances address floodplains and avalanche zones. Nichols added ordinances on fire risk. Slenkamp emphasized that there has been no activity on the Mitkof ground by the Trust. The recent slides on Mitkof all occurred in the absence of forest activity – public safety risks exist in the absence of forest activity. Maisch summarized that no one agency has jurisdiction on this issue. We may be asked this question because it's not clear who else can do this. Wolfe disagreed. He stated that the local government has the authority to deal with it. The S&TC did a good job of assessing the hazards. This issue is restricted to Petersburg; other areas with this risk have largely already been harvested.

Nichols added that there is a civil liability for private entities if something does happen, whether it's blowdown on a neighboring property, runoff, or landslides. The risks have typically been addressed through litigation rather than legislation.

Vinsel asked what the Commissioner, Governor, and Legislature thinks. Do they want us to bring public safety into FRPA? Maisch replied that the Board makes recommendations. The Board could state that they aren't comfortable making a recommendation to expand the authority. The DNR Commissioner, who is also the former Attorney General, expressed some concern that the Board hadn't addressed public safety, although he was open to the Board process. It struck him odd that the Board didn't address public safety with regard to forest operations. The Board could pass the buck, but this Board was appointed to ~~get~~ good advice on issues like this.

*provide*

Nichols declared that it is extremely difficult to regulate a natural phenomenon. FRPA does a good job of regulating bad decisions on the ground like putting fill on unstable ground. It's hard to regulate issues between land owners – how much of the landslide risk is natural, how much is associated with the forest operations? These things happen with every major storm event in Southeast Alaska. We can't regulate something caused by natural events. Maisch commented that there is a risk for operating on a steep slope, and that is also a financial decision. Different landowners accept different levels of risk. We hope liability deters bad decisions.

Suzanne West stated that she knows that a family was unable to get landslide insurance. If an insurance applicant knows that the Trust still has plans for a timber sale and doesn't acknowledge that, it could be considered fraud. She has climbed to the apex of the slides – what came down in the channel is all logging debris. On the recent slide she did a line of sight estimate and it appears that the slide started on the Trust property.

Hanley asked whether the Trust made its land selection from state lands. Slenkamp explained that the Mitkof parcel is original Trust land -- it predates the state selections. Hanley asked whether the Trust had discussed trading this parcel for other state land. Slenkamp said that the Trust is open to all proposals. Hanley recognized that the state Southeast State Forest land base is limited, but the Trust could look at lands elsewhere in the state. Curran commented that DOF wouldn't want to manage the Mitkof land.

Maisch summarized the Board's discussion. The Board doesn't want to reconsider the original decision to not request authority for public safety under the FRPA.

**One Tree Education Program.** Jan Dawe, UAF, said that the Fairbanks community is eager for forestry information, and desirous of participating in forest management activities. The Alaska Boreal Forest Council developed some forestry education programs, including Tapping into Spring, which engaged students.

The One Tree Alaska program tries to use all parts of a tree to make different products (*see handout*). The organizers originally invited the community in to see how many things could be made from one birch tree. She showed examples of knitting needles made from birch flitches, and leftovers from the needles were used to make artist's charcoal. The charcoal project was used to discuss the combustion process and products with students, thus integrating science and art.

The trees for the project came from the Tanana Valley State Forest. The original funding came from the USDA National Institute of Food and Agriculture (NIFA) Wood Utilization Research Program with 13 cooperating universities. The program looked at efficient uses of low-value wood to develop and promote renewable materials. It demonstrates vertical integration of wood values. One Tree emphasizes local resources that are locally used and locally sold. One Tree Alaska is an outreach program to K-12 schools. Dawe wanted the program to increase awareness of K-12 students on how wood resources can be used and how that could benefit the local economy.

Participants harvested and skinned the tree for bark, then main limbs, and green leaves. All tree parts were labeled, packed, and ready for delivery to about 30 local artisans and scientists. They took samples to document the tree's age – it was 6.5" dbh and 67 years old. Teachers wanted students to be involved, so One Tree cut the tops of 16 more birch (the upper 40 feet).

Studying phenology became a focus for seven classrooms – they forced branches to bud burst, and studied dormancy. There is little opportunity to do plant work during the school year. Climate

# Alaska's Constitution

A C I T I Z E N ' S G U I D E

Fourth Edition

*Alaska Legislative Affairs Agency • Gordon Harrison*



## Article VIII

examples—were articulated. Thus, Alaska’s natural resource article was a unique product of the 1956 convention, and it remains unique among the states, even though constitutional treatment of natural resource and environmental issues in other states has grown through amendment and revision in recent years.

Article VIII of Alaska’s constitution clearly establishes that the natural resources of Alaska should be developed. Indeed, to the convention delegates, the very success of statehood hung in the balance. But while this article creates a strong presumption in favor of resource development, it will not abide that which is wasteful, biologically exhaustive, rooted in special privilege, narrowly selfish or contrary to the rights of others and the larger public interest. With certain exceptions, this article allows the government to sell, lease or give away public land and resources, but it may do so only in accordance with constitutional and statutory guidelines, and all transactions must be in full public view.

Despite their philosophical aversion to the “giveaway” of public resources, the delegates were enamored with the long-established federal method of disposing of public mineral lands, which allows a person to obtain the right to receive fee title to a legitimate mineral deposit by filing a claim to it and performing certain tasks thereafter. Meanwhile, a draft article on natural resources prepared by consultants to the convention called for the state to retain in public ownership the subsurface title to all mineral lands and to lease the right to produce minerals from these lands. Congress was predisposed to the same idea, and in all likelihood was going to prohibit the state from transferring out of state ownership the mineral rights to land acquired from the federal government. Nonetheless, in the constitution the delegates opted for the existing federal system of obtaining full title to mineral lands “if not prohibited by Congress.” As it happened, Congress forced on the state the leasing alternative and required the state to retain ownership of the minerals on its land.

Delegates debated at some length the organization of the executive agency to be charged with managing natural resources. There was vocal public support for a commission of fish and game to oversee the management of those resources (as there was support for the creation of a constitutional board of education to head the state department of education). In the end, however, the delegates left the way open for a board to head a principal department but willed to the legislature the task of deciding when and where (see discussion of Article III, Section 25).

It is not surprising that controversies over resource management have been among the most bitter in Alaska’s political history and that the courts have been called on frequently to decide the meaning of constitutional language in the context of these disputes. This is because natural resources loom so large in the lives of so many Alaskans, if not as a source of livelihood then as source of cherished recreation. It is also because the language of this article is general and often opaque. A major challenge of the resource agencies has been to manage in the interest of conservation and to satisfy the needs of various user groups without creating special privileges and exclusive rights, which the constitution abhors. The courts have had to determine when management schemes reasonably limit