

ALASKA STATE LEGISLATURE
SENATE RESOURCES STANDING COMMITTEE

February 21, 2020

3:30 p.m.

MEMBERS PRESENT

Senator Peter Micciche, Chair
Senator John Coghill, Vice Chair
Senator Click Bishop
Senator Cathy Giessel
Senator Joshua Revak
Senator Jesse Kiehl

MEMBERS ABSENT

Senator Scott Kawasaki

COMMITTEE CALENDAR

SENATE BILL NO. 171

"An Act relating to industrial hemp."

- MOVED CSSB 171 (RES) OUT OF COMMITTEE

SENATE BILL NO. 150

"An Act repealing the termination date for the intensive management hunting license surcharge."

- MOVED SB 150 OUT OF COMMITTEE

SENATE BILL NO. 161

"An Act relating to geothermal resources; relating to the definition of 'geothermal resources'; and providing for an effective date."

- HEARD & HELD

SPONSOR SUBSTITUTE FOR SENATE BILL NO. 155

"An Act relating to exploration and mining rights; relating to annual labor requirements with respect to mining claims and related leases; relating to statements of annual labor; defining 'labor'; and providing for an effective date."

- MOVED CSSSB 155 (RES) OUT OF COMMITTEE

PREVIOUS COMMITTEE ACTION

BILL: SB 171

SHORT TITLE: INDUSTRIAL HEMP PROGRAM; MANUFACTURING

SPONSOR(s): SENATOR(s) HUGHES

01/31/20 (S) READ THE FIRST TIME - REFERRALS
01/31/20 (S) RES
02/10/20 (S) RES AT 3:30 PM BUTROVICH 205
02/10/20 (S) Heard & Held
02/10/20 (S) MINUTE(RES)
02/21/20 (S) RES AT 3:30 PM BUTROVICH 205

BILL: SB 150

SHORT TITLE: INTENSIVE MGMT SURCHARGE/REPEAL TERM DATE

SPONSOR(s): REVAK

01/21/20 (S) READ THE FIRST TIME - REFERRALS
01/21/20 (S) RES, FIN
02/21/20 (S) RES AT 3:30 PM BUTROVICH 205

BILL: SB 161

SHORT TITLE: GEOTHERMAL RESOURCES

SPONSOR(s): RULES BY REQUEST OF THE GOVERNOR

01/22/20 (S) READ THE FIRST TIME - REFERRALS
01/22/20 (S) RES, FIN
02/10/20 (S) RES AT 3:30 PM BUTROVICH 205
02/10/20 (S) Heard & Held
02/10/20 (S) MINUTE(RES)
02/21/20 (S) RES AT 3:30 PM BUTROVICH 205

BILL: SB 155

SHORT TITLE: EXPLORATION & MINING RIGHTS; ANNUAL LABOR

SPONSOR(s): BISHOP

01/21/20 (S) READ THE FIRST TIME - REFERRALS
01/21/20 (S) RES, FIN
02/03/20 (S) SPONSOR SUBSTITUTE INTRODUCED-REFERRALS
02/03/20 (S) RES, FIN
02/05/20 (S) RES AT 3:30 PM BUTROVICH 205
02/05/20 (S) Heard & Held
02/05/20 (S) MINUTE(RES)
02/14/20 (S) RES AT 3:30 PM BUTROVICH 205
02/14/20 (S) Heard & Held
02/14/20 (S) MINUTE(RES)

02/19/20 (S) RES AT 3:30 PM BUTROVICH 205
02/19/20 (S) Heard & Held
02/19/20 (S) MINUTE (RES)
02/21/20 (S) RES AT 3:30 PM BUTROVICH 205

WITNESS REGISTER

SENATOR SHELLEY HUGHES
Alaska State Legislature
Juneau, Alaska

POSITION STATEMENT: Sponsor of SB 171, discussed the changes in the committee substitute SB 171.

BUDDY WHITT, Staff
Senator Shelley Hughes
Alaska State Legislature
Juneau, Alaska

POSITION STATEMENT: Explained the committee substitute for SB 171.

ROB CARTER, Agronomist
Division of Agriculture
Alaska Department of Natural Resources
Palmer, Alaska

POSITION STATEMENT: Answered questions regarding the committee substitute for SB 171.

JOAN WILSON, Assistant Attorney General
Commercial, Fair Business, and Child Support Section
Civil Division
Alaska Department of Law
Anchorage, Alaska

POSITION STATEMENT: Answered questions regarding SB 171.

DAVID SCHADE, Director
Division of Agriculture
Alaska Department of Natural Resources
Homer, Alaska

POSITION STATEMENT: Answered questions regarding SB 171.

DUSTIN ELSBERRY, Intern
Senator Joshua Revak
Alaska State Legislature
Juneau, Alaska

POSITION STATEMENT: Provided an overview of SB 150.

RON SOMERVILLE, representing self

Juneau, Alaska

POSITION STATEMENT: Testified in support of SB 150.

EDDIE GRASSER, Director
Division of Wildlife Conservation
Alaska Department of Fish and Game
Palmer, Alaska

POSITION STATEMENT: Testified in support of SB 150.

JAKE FLETCHER, representing self
Talkeetna, Alaska

POSITION STATEMENT: Testified in support of SB 150.

ROD ARNO, Executive Director
Alaska Outdoor Council
Palmer, Alaska

POSITION STATEMENT: Testified in support of SB 150.

PAUL CLAUS, owner
Ultima Thule Outfitters
Chugiak, Alaska
Wrangell-St. Elias National Park and Preserve, Alaska

POSITION STATEMENT: Testified in support of SB 150.

VIKKI JO KENNEDY, representing self
Kodiak, Alaska

POSITION STATEMENT: Testified in support of SB 150.

SARA LONGAN, Deputy Commissioner
Alaska Department of Natural Resources
Anchorage, Alaska

POSITION STATEMENT: Provided an overview of SB 161 and participated in a presentation on geothermal resources.

STEVEN MASTERMAN, Director
Division of Geological and Geophysical Surveys
Alaska Department of Natural Resources
Fairbanks, Alaska

POSITION STATEMENT: Participated in the presentation on geothermal resources related to SB 161.

ACTION NARRATIVE

[3:30:56 PM](#)

CHAIR PETER MICCICHE called the Senate Resources Standing Committee meeting to order at 3:30 p.m. Present at the call to order were Senators Kiehl, Revak, Bishop, Coghill, Giessel, and Chair Micciche.

SB 171-INDUSTRIAL HEMP PROGRAM; MANUFACTURING

[3:31:52 PM](#)

CHAIR MICCICHE announced that the first order of business would be SENATE BILL NO. 171, "An Act relating to industrial hemp."

[3:32:14 PM](#)

SENATOR COGHILL moved to adopt the committee substitute (CS) for SB 171, work order 31-LS1431\M, as the working document.

CHAIR MICCICHE objected for purposes of discussion.

[3:33:03 PM](#)

SENATOR SHELLEY HUGHES, Alaska State Legislature, Juneau, Alaska, sponsor of SB 171, stated that the CS makes necessary changes to keep an opportunity alive for Alaskans based on the 2018 U. S. Farm Bill. The bill will continue the program beyond October 2020. She added that the Division of Agriculture supports the bill moving forward.

She said industrial hemp has generated great interest due to the multitude of hemp-made products that can be produced. She noted that Lower 48 farmers are experiencing high yields from growing hemp for oil or fiber use. She said Canada is the world's second largest producer of hemp with a climate like Alaska's.

She summarized that everyone wants to diversify the state's economy and SB 171 will pave a way for the industrial hemp opportunity.

[3:35:07 PM](#)

SENATOR BISHOP said he supports the bill, especially after speaking with Alaska Farm Bureau members regarding the use of hemp fiber in concrete due to its resiliency to earthquakes.

SENATOR HUGHES said she concurs, especially having experienced the recent earthquake. She added that oil spill cleanup is another use for hemp that is particularly relevant to Alaska.

SENATOR GIESSEL said she did not want to throw cold water on hemp uses, but a civil engineer told her that it is not possible to make flexible concrete. She added that hemp is an organic

product that would rot. She suggested that the use of hemp in concrete should not be a selling point.

SENATOR KIEHL noted that the fiscal note strictly reflects fee registration for every retailer of hemp, cannabidiol (CBD), and non-marijuana products even though registration is not in the text of the bill. He asked Senator Hughes if she is comfortable with the notion of registering, with a fee, every retailer, whether it be the farm supply store or the people selling hand cream.

SENATOR HUGHES explained that the Division of Agriculture brought the registration requirement to her office. She said Buddy Whitt, her staff member, will address the registration question. She surmised that retailer registration may be part of the 2018 Farm Bill.

3:38:16 PM

BUDDY WHITT, Staff, Senator Hughes, Alaska State Legislature, Juneau, Alaska, explained that the committee and the Division of Agriculture brought up two major areas of concern during the first hearing for SB 171. First, how to balance the regulation requirements in the 2018 Farm Bill, specifically the thresholds of tetrahydrocannabinol (THC) for hemp. The U.S Department of Agriculture (USDA) does not allow THC above 0.3 percent. However, Senate Bill 6 from the 30th Alaska State Legislature gave growers some grace to correct crops tested above 0.3 percent. The intent of the CS is to find a balance for the state's industrial hemp program regulations and the USDA regulations.

He explained that Senator Coghill brought up the second area of concern of someone having a crop over a certain THC threshold. He said his CS overview will address Senator Coghill's threshold concern in finding the right balance working with the division.

He explained the changes in the CS for SB 171 from version A to version M, "An Act relating to Industrial Hemp," as follows:

- Page 2, lines 30 through 31:
 - Goes directly to the retail question.

He said the added language allows the department to establish regulations to permit manufacturing and retail sales of hemp and products made from industrial hemp.

- Page 3, lines 25 through 28:

- o A new subsection has been added to the bill that the department "may" develop an industrial hemp program that complies with federal requirements.

MR. WHITT said the previous version of the bill stated that the department "shall" develop that program, the CS added the "may" language for a specific purpose.

- Page 3, line 29 through page 4, line 4
 - o The CS removes the repeal of AS 03.05.079, and instead revises this subsection so that if someone produces industrial hemp with THC between .3 percent and 1.0 percent, they may retain and recondition it.
- Page 4, lines 5 through 7
 - o A new subsection stating that if a person retains and fails to recondition, they are guilty of a violation.

MR. WITT explained that the CS adds a new subsection to provide a little bit of grace. Someone in good faith can try to correct their crop. However, if a producer retains the crop and makes no reconditioning attempt, the producer is in violation of the statute.

- Page 4, lines 8 through 14
 - o Revised the definition of Industrial Hemp to coincide with the federal definition change in the 2018 Farm Bill.

He said the definition revision matches the 2018 Farm Bill definition.

[3:42:33 PM](#)

- Page 4, Lines 16 through 24
 - o Conditional language for the effective date of the repeal of AS 03.05.077.
 - o The repeal of the pilot program will take effect once the Industrial Hemp Program, developed by the department, is approved by the USDA.

MR. WHITT said the division and the bill sponsor believe in keeping the pilot program because the only thing USDA program approval addresses is interstate commerce. The conditional

effective language allows the pilot program to continue until the USDA responds to the many states, including Alaska, which are pushing back to allow farmers a grace period for THC correction.

CHAIR MICCICHE asked Mr. Carter from the Division of Agriculture if he is comfortable with the definition change and the pilot project continuing unless the USDA approves the program.

[3:45:14 PM](#)

ROB CARTER, Agronomist, Division of Agriculture, Alaska Department of Natural Resources, Palmer, Alaska, replied that he is very comfortable with the proposed process. He said he sees the USDA evolving in regulating the industrial hemp market. The bill allows Alaska to continue its pilot program during the interim testing rule process.

CHAIR MICCICHE asked if reconditioning is simply the blending of a lower proportion of THC from another crop.

MR. CARTER answered yes. He noted that reconditioning is very standard in other agricultural industries. He detailed that if an industrial hemp lot tests above 0.3 percent THC and below 1.0 percent THC, the producer can recondition and certify for commerce with division approval.

[3:48:51 PM](#)

SENATOR KIEHL said he did not recall retail registration language in SB 6. Industrial hemp regulations are different from other agricultural products, particularly in registering everybody that sells hemp products.

[3:50:31 PM](#)

At ease.

[3:50:52 PM](#)

CHAIR MICCICHE called the committee back to order.

[3:51:05 PM](#)

JOAN WILSON, Assistant Attorney General, Civil Division, Commercial, Fair Business, and Child Support Section, Alaska Department of Law, Anchorage, Alaska, disclosed that she was involved with SB 6. She said one of the major changes in the bill happened when the Marijuana Control Board (MCB) decided that it no longer wanted jurisdiction over CBD and products from marijuana plants that have 0.3 percent THC or less. The amended marijuana definition that reflected the MCB decision left the

marketing, retail, and public safety oversight of hemp unaddressed. The intent of SB 6 was to have the Division of Agriculture take jurisdiction over the retail sale of hemp and hemp parts, including such things as the oil.

SENATOR KIEHL asked if the definition of production includes retail of the finished product. He remarked that requiring retail registration sounds like funny definition writing when the state does not require retailers to register for most finished products. He said his question goes to the sponsor's intent and desire for the bill, and the industry in Alaska. He inquired whether the right move is to register and regulate the ultimate retailer or if the state will be satisfied once a product is determined to be safe and not psychoactive.

[3:53:20 PM](#)

SENATOR HUGHES replied the hemp industry is a new area and she does not have a problem with including retail registration. She said she felt comfortable with the Division of Agriculture having a sense of what is happening regarding retail sales for consumer safety purposes. She said she is open to the committee's discussion on concerns.

MS. WILSON pointed out that a number of the entities that will be producing CBD oil have had absolutely no objection to registration because they understand that absent MCB jurisdiction that someone needs to be guaranteeing the safety of the product. She noted that selling industrial hemp is currently against the law.

[3:55:07 PM](#)

DAVID SCHADE, Director, Division of Agriculture, Alaska Department of Natural Resources, Homer, Alaska, clarified that the retail registration allows the division to go in and test the products. The division has oversight during growing and processing to make sure the hemp is a good product. However, the retail provision provides traceability to deal with manufacturing problems and products not kept in a safe manner. He said of concern are THC content, pesticides, and heavy metals. He pointed out that retail registration is a simple process.

MR. SCHADE said the other key issue is while the federal government has said that the cannabinoids in industrial hemp are legal, the product is still a controlled substance and requires registration. No one can go out and grow industrial hemp and sell it. Hemp production must be in a program and part of the

division's process. The division has worked hard in carefully finding the balance with the federal government, he said.

[3:57:22 PM](#)

CHAIR MICCICHE asked where the break occurs between industrial hemp and current hemp sales.

MR. SCHADE answered that except for a few states with permanent programs, industrial hemp procured outside of the pilot program is in the black market. He admitted that there are millions of dollars in product out on the market.

He said Alaska has the unique ability to say if a product derived from industrial hemp with THC below 1.0 percent and conditioned below 0.3 percent is legal; part of that product on a federal level must stay and remain under 0.3 percent.

MR. SCHADE noted that the registration the division designed for the growing of non-consumption products is very simple. Registration allows the division to know who has the product and to make sure that federal and state police agencies do not consider it to be marijuana. Manufacturing is a little more of a process to assure product safety, including following Alaska Department of Environmental Conservation (DEC) food laws.

[3:59:20 PM](#)

CHAIR MICCICHE asked if it's correct that many of the gift shops around the state that are selling black market hemp products that the state chooses not to enforce.

MR. SCHADE replied there is currently no legal hemp product on the market.

[4:00:29 PM](#)

CHAIR MICCICHE removed his objection to the CS.

[4:00:38 PM](#)

He announced that seeing no objection, the CS for SB 171, version M, is before the committee as the working document.

He noted that public testimony occurred in a previous meeting and remains open.

He asked Mr. Schade if he had further comments.

MR. SCHADE said he appreciates the committee working with the division to get clarification on industrial hemp. He stated that

SB 171 is a great compromise bill and is very supportive of Alaska's hemp industry.

CHAIR MICCICHE asked if anyone wanted to testify on SB 171.

He inquired if Senator Hughes had any final comments on the bill.

SENATOR HUGHES said her hope is the bill will pass so that the industrial hemp program can move forward into the coming years.

[4:01:53 PM](#)

CHAIR MICCICHE closed public testimony.

[4:02:14 PM](#)

SENATOR COGHILL moved to report CSSB 171 (RES) committee with individual recommendations and attached fiscal note.

[4:02:22 PM](#)

CHAIR MICCICHE said there being no objection, CSSB 171 (RES) moved from the Senate Resources Standing Committee.

[4:02:33 PM](#)

At ease.

SB 150-INTENSIVE MGMT SURCHARGE/REPEAL TERM DATE

[4:04:26 PM](#)

CHAIR MICCICHE announced that the next order of business would be SENATE BILL NO. 150, "An Act repealing the termination date for the intensive management hunting license surcharge."

[4:04:57 PM](#)

DUSTIN ELSBERRY, Intern, Senator Joshua Revak, Alaska State Legislature, Juneau, Alaska, said hunting is an essential piece of Alaskan life and it is of the utmost importance to protect wildlife for future Alaskans. The state needs wildlife management to maintain the special connection Alaskans have with wildlife.

He explained that the moment a moose, caribou or deer population is determined to be at risk of falling below a sustainable level, the work of intensive management (IM) begins to identify the root cause. Enacted action plans using quotas or habitat management that are based on science and population analysis ensure sustainable populations.

MR. ELSBERRY said since 2016, the IM program received funds from a surcharge placed on hunting licenses. However, the surcharge had a sunset date in 2022. SB 150 repeals the surcharge sunset date and allows the IM program to be self-sustaining. Prior to 2016, appropriations from the capital budget funded the IM program. However, the IM program is currently self-funded via the license surcharge. IM funds leverage federal money through the Pittman-Robertson Act (P-R Act), a 75/25 formula match where the 25 percent comes from the state's surcharge funds.

He emphasized that the IM surcharge does not impact true subsistence hunters or senior hunters, both groups are exempt from the surcharge.

He summarized that SB 150 ensures that the IM program is sustainable, protects wildlife populations, promotes food security across the state, and assures that Alaska's cultures carry on to future generations.

[4:08:02 PM](#)

At ease.

[4:09:09 PM](#)

CHAIR MICCICHE called the committee back to order. He said the committee will first hear from invited testimony.

[4:09:30 PM](#)

RON SOMERVILLE, representing self, Juneau, Alaska, testified in support of SB 150. He detailed that he is a former Alaska Department of Fish and Game employee, former director for the Division of Wildlife Conservation, and former chairman for the Alaska Board of Game. He said his previous duties on the Alaska Board of Game might help in setting the background on SB 150.

He recalled that the IM law passed in 1994 and the instructions were clear that the intent was to focus on moose, caribou, and deer throughout the state.

He emphasized that predator control is not the only form of IM, funding supports a variety of activities including habitat manipulation and controlled burning. He admitted that predator control is necessary in some cases. However, predator control cannot use P-R Act funds.

MR. SOMERVILLE noted that he also represents Territorial Sportsmen and the organization supports SB 150.

CHAIR MICCICHE commented that the Kenai Peninsula would like a break on habitat manipulation due to forest fires that burned 4,000 acres during the last 4 years.

[4:14:59 PM](#)

EDDIE GRASSER, Director, Division of Wildlife Conservation, Alaska Department of Fish and Game, Palmer, Alaska, testified in support of SB 150. He said the bill is simple and straight forward where the legislation takes away the sunset clause for the IM program.

He said the IM law ensures that Alaskans have an opportunity to feed their families. He added that the department is currently pursuing an initiative called The Wild Harvest Initiative to provide food security, especially in rural Alaska.

He said the IM program adds another tool to the department's toolbelt to create more opportunities for people to feed their families. The IM program is not just about predator control, the department does a lot of habitat work as well. For example, the department purchased a roller-chopper in 2019 for habitat enhancement projects without using fire. He noted that the department has not heard from the general public on anything negative about the IM program.

MR. GRASSER recalled a time when the U.S. Fish and Wildlife Service used poison baiting for predator control, the department does not support that drastic measure. The department supports science-based management of wildlife that maximizes the opportunities for Alaskans to feed their families.

He detailed that the revenue stream from the IM licensing surcharge has grown to approximately \$1 million per year. The surcharge is an important revenue stream for research and surveys on wildlife populations to define objectives to get people out hunting.

MR. GRASSER said the department feels that based on observations from other states regarding cost of licenses and tags, most states charge a tag fee, but Alaska does not charge for tags other than muskox and brown bear.

MR. GRASSER summarized that the IM license surcharge is an important revenue stream to the department. They would like to see the surcharge enshrined in statute and the sunset clause eliminated.

[4:17:40 PM](#)

SENATOR GIESSEL asked if the \$1 million annual revenue stream is from the IM surcharge or the combination with P-R Act funds.

MR. GRASSER answered that the revenue is strictly from the IM surcharge.

SENATOR KIEHL REFERRED TO a pie chart on IM spending activities. He asked how much spending occurs on predator control versus habitat enhancement within the research and management portion.

MR. GRASSER answered that the department receives \$4 million from the IM surcharge with the P-R Act dollars. Most of the work done to support predator control occurs within survey and inventory work. The IM law specifies steps in the process to implement different measures.

He emphasized that survey and inventory work sometimes indicate clearly that predators are not the limiting factor. Predator control is one of the limiting factors that the department has the most control over in its toolbox. However, the department cannot always have a fire because it might jeopardize a community. Predator control does not occur until the department does the survey and inventory work to verify the landscape, remaining population objectives, and if the harvestable objectives meet the intent of the IM law.

[4:20:09 PM](#)

SENATOR KIEHL referred to a map that showed approximately 90 percent of Alaska land with a positive IM determination. He asked if the IM management fee just funds what wildlife conservation is going to need anyway.

MR. GRASSER answered that the IM surcharge funds have specific goals within the IM statutes. He noted that the department is currently looking at a \$1.7 million deficit for FY 2021 in its budget. Without the surcharge funding, the department would have difficulty doing its survey and inventory work.

CHAIR MICCICHE said he has a couple of comments related to constitutionality. The 1994 IM law connects with Article XIII, Section 4 in the Alaska Constitution. He paraphrased AS 16.05.255(k):

Alaska's wildlife along with all other renewable resources shall be utilized, developed, and maintained on the sustained yield principle. Statutory support as

the achievement and maintenance in perpetuity the ability to support a high level of human harvest of game subject to preferences among beneficial uses on an annual periodic basis.

CHAIR MICCICHE remarked that challenges to the bill would have occurred if there was a lot of resistance to the IM program in the past.

[4:22:55 PM](#)

CHAIR MICCICHE opened public testimony on SB 150.

[4:23:18 PM](#)

JAKE FLETCHER, representing self, Talkeetna, Alaska, testified in support of SB 150. He said he is a registered guide and a member of the Alaska Professional Hunters Association (APHA). Being good land stewards is one of Alaskans' biggest duties and part of being a steward is using conservation. The bill provides money so that the department can practice conservation.

[4:24:37 PM](#)

ROD ARNO, Executive Director, Alaska Outdoor Council, Palmer, Alaska, testified in support of SB 150. He explained that the council and other reputable hunting conservation organizations got together in 2016 when they realized that the amount of general funds that were available to the state for their programs was on the decline.

He emphasized that Alaskan hunters are not looking for a free ride. The group agreed on raising resident and nonresident fees to fund wildlife conservation without general funds.

He detailed the following annual hunting license data:

- 65,000 Alaskans buy hunting licenses
- 10,000 nonresidents
- 700-800 aliens
- 3,000 military
- 16,000 low income and 6,000 senior Alaskans who don't buy a license

MR. ARNO noted that there are some exempt license holders who continue to buy a license just so that they are contributing to the fund.

[4:27:15 PM](#)

PAUL CLAUS, owner, Ultima Thule Outfitters, Chugiak, Alaska, testified in support of SB 150. He said the legislation has already proven itself after three years.

SENATOR BISHOP asked Mr. Grasser for examples of how the fund has improved habitat.

MR. GRASSER answered that the Division of Wildlife Conservation has done quite a bit of work in the Tok area with its roller chopper and various prescribed burns.

CHAIR MICCICHE noted that he drove a chopper tractor when he was young and asked if the division's roller chopper is similar.

MR. GRASSER answer yes. He detailed that the division's roller chopper is a trailer that hooks on a Caterpillar bulldozer.

CHAIR MICCICHE commented that the chopper tractor he drove was self-contained.

[4:30:27 PM](#)

CHAIR MICCICHE closed public testimony.

SENATOR KIEHL noted that the legislature uses sunset dates to ensure program and board review, make sure things are efficiently following the statutes, and to safeguard from boards having mission creep. He asked why the bill deletes the sunset date rather than extending it.

MR. GRASSER answered that the program is well established, and funding should be continuous. Managing wildlife never stops, especially to meet harvestable objectives. Managing wildlife is integral work by the department that requires a consistent funding stream with certainty.

[4:32:10 PM](#)

At ease.

[4:32:44 PM](#)

CHAIR MICCICHE called the committee back to order. He asked if management work would cease if the discontinuation of the IM surcharge fund collection occurs.

MR. GRASSER answered that management work would not totally stop, but it would be severely impacted. He said discontinuation would remove \$4 million from the department's budget.

CHAIR MICCICHE asked if similar work would continue but at a smaller proportion.

MR. GRASSER answered correct.

SENATOR GIESSEL asked if discontinuing the surcharge would leave \$3 million of P-R Act money unutilized by the State of Alaska.

MR. GRASSER answered not necessarily. He explained that apportionment for the State of Alaska from P-R Act funds has gone down by \$2 million. Instead of \$28 million for FY 2020, the department is looking at \$26 million. Discontinuing the surcharge may have no impact on the department.

[4:34:20 PM](#)

CHAIR MICCICHE reopened public testimony.

[4:34:47 PM](#)

VIKKI JO KENNEDY, representing self, Kodiak, Alaska, testified in support of SB 150. She said Alaskans pay for the intensive management of wildlife through licenses and fees. She emphasized that the program takes care of itself and puts money back into it.

[4:35:56 PM](#)

CHAIR MICCICHE closed public testimony.

He commented that although the bill repeals the termination date, the legislature retains the right to repeal the IM program at any time if things are not working out. In some cases, the legislature spends a lot of time on extending termination dates for programs that are known to continue.

SENATOR REVAK, sponsor of SB 150, thanked those that testified, especially those from communities that wanted to help take care of the game that they manage regularly.

CHAIR MICCICHE thanked Senator Revak for bringing the legislation forward.

[4:37:09 PM](#)

SENATOR COGHILL moved to report SB 150, work order 31-LS1390\A, from committee with individual recommendations and forthcoming fiscal notes.

[4:37:24 PM](#)

CHAIR MICCICHE said there being no objection, SB 150 is reported from the Senate Resources Standing Committee.

[4:37:31 PM](#)

At ease.

SB 161-GEOTHERMAL RESOURCES

[4:39:18 PM](#)

CHAIR MICCICHE announced that the next order of business would be SENATE BILL NO. 161, "An Act relating to geothermal resources; relating to the definition of 'geothermal resources'; and providing for an effective date."

He noted that the committee first heard the bill on February 10. The Alaska Department of Natural Resources (DNR) has responded to committee questions and presented a map with the known statewide geothermal resources and their proximity to population centers. The committee also requested a presentation on geothermal resources in Alaska.

[4:40:07 PM](#)

SARA LONGAN, Deputy Commissioner, Alaska Department of Natural Resources, Anchorage, Alaska, thanked the committee for inviting the department to again discuss SB 161 on geothermal resources.

[4:40:50 PM](#)

At ease.

[4:44:08 PM](#)

CHAIR MICCICHE called the committee back to order.

MS. LONGAN discussed the following from slide 2 from the DNR presentation on geothermal resources, Overview, and slide 3, AGILE Act:

- Slide 2: Overview
 - AGILE Act
 - Fundamentals of geothermal systems
 - Purpose of this bill
 - DNR geothermal leasing history
 - Sectional summary
 - Analysis of selected sections & responses to questions

- Slide 3: AGILE Act

- o Senator Murkowski's Advanced Geothermal Innovation Leadership Act of 2019 (AGILE Act)
- o Authorizes grants and incentives
- o Establish a repository for geothermal drill data
- o Supports research into Enhanced Geothermal Systems
- o Supports heat pump improvements
- o Defines geothermal energy as a renewable energy source
- o Encourages co-production of geothermal with hydrocarbons and critical minerals
- o Improves federal permit coordination

STEVEN MASTERMAN, Director, Division of Geological and Geophysical Surveys, Alaska Department of Natural Resources, Fairbanks, Alaska, reviewed the parameters of a geothermal system on slide 4, Fundamental Ingredients of Useable Geothermal Energy:

- Elevated geothermal gradient
- Porosity and permeability for the migration of fluids
- Surface access
- Sufficiently large thermal system
- Customers for energy

[4:46:39 PM](#)

MR. MASTERMAN discussed slide 5, Heat Flow in Alaska. He referenced a map and said the illustration provides a broad view of the amount of energy coming to the earth's surface across Alaska. He detailed that the red areas on the map indicate more energy and green areas have less energy. For example, the North Slope has an area of low heat coming to the earth's surface where sediments are thick and insulate the surface from heat beneath. Along the Aleutians and the Alaska Peninsula where there is a lot of volcanic activity, there's higher heat flow.

MR. MASTERMAN displayed slide 6, North Slope Geothermal Gradient. He referenced a map and said the illustration shows geothermal gradients with the degree centigrade per 100 meters of depth. He noted that the temperature data came from the bottom of bore holes drilled into North Slope oil and gas fields by producers. The temperature data allowed the division to construct maps that show the relative amount of heat that is coming out of the earth and the rate at which the temperature increases when going into the earth.

MR. MASTERMAN detailed that the illustration shows most of the gradients are 3 to 4 degrees centigrade per 100 meters. Going down 1,000 meters shows the temperature increases by 30 to 50 degrees centigrade. He added that the map provides a rough estimate of what sufficient temperature data could allow across the state.

He said Chair Micciche asked in the previous hearing where there may be undiscovered thermal energy sources. He conceded that the division does not have the level of information as the North Slope bore hole temperatures to provide detailed contours across the rest of the state.

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MR. MASTERMAN TURNED TO slide 7, Geothermal Gradients. He explained that the graph shows examples of geothermal gradients. The colored band in the graph is a typical geothermal gradient for Alaska that shows subterranean temperature increases. For example, the North Slope reaches a temperature of 100 degrees centigrade at 10,000 feet or 3 kilometers depth.

He pointed out that the graph shows two points of reference, one of the Chena Hot Springs geothermal system where the temperature is about 60 degrees centigrade on the surface and about 80 degrees centigrade where the hot water is entering the drill holes for power production. The second point is the Makushin system where the temperature is almost 200 degrees centigrade.

MR. MASTERMAN explained that the temperature of a geothermal system is important for the amount of energy production. Chena Hot Springs is a cooler system with production of hundreds of kilowatts of energy. The Makushin system has a higher temperature system at an energy magnitude of tens of megawatts of electrical production.

MR. MASTERMAN discussed the following from slide 8, Geothermal Resource Quality:

- Generation capacity per unit cost depends on several geologic and economic factors:
 - Temperature (hotter is better)
 - Flow rate (higher flow rates are better)
 - Reservoir Framework (uniform porosity better than fractures)
 - Recharge (partially natural better than all artificial)
 - Depth (shallower is less expensive, thus better)

- o Location, location (relative to population, transmission system, development costs, etc.)

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MR. MASTERMAN displayed slide 9, Geothermal Systems. He said the map on the slide shows the distribution of all known hot springs across the state as well as the distribution of the active volcanoes in the state.

He pointed out there is a belt of hot springs across the interior of the state that are generally associated with cooling granite bodies. He detailed that hot water in the granite bodies is in fractures. Accessing hot water requires intersecting the fractures. The granite bodies are older systems that are cooler and don't have as high temperature water or productive volumes as the volcano related system that are present along the Alaska Peninsula and in the Aleutians.

He pointed out that there are more high temperature systems along the Aleutians than in the granite related systems. The volcano related systems have magma close to the surface which is a hotter material that can generate more and hotter volumes of hot water.

MR. MASTERMAN displayed slide 10, Alaska's Geothermal Resources Fairbanks Region:

- Chena
 - o 80 degrees Celsius at 260 meters
 - o Reservoir approximately 130 to 145 degrees Celsius

He said slide 10 shows where the hot springs are in relation to Fairbanks. Chena Hot Springs is close and there are a couple of others that are fairly close to population centers. The Circle Hot Springs northeast of Fairbanks is close to Central, Manly Hot Springs is close to Manly. Those systems are similar in temperature to Chena Hot Springs with slightly higher water flows that may be able to produce slightly larger quantities of electricity. The slide also shows projected reservoir temperature that is a theoretical value based on the geochemistry of the water that is coming to the surface. For example, the evidence for Chena Hot Springs suggests that drilling deep enough will intersect waters that are somewhere between 130 and 145 degrees Celsius, temperatures that will allow for more power generation.

MR. MASTERMAN detailed that the Chena Hot Springs has a 400-kilowatt capacity. In a 2007 report, they indicated that the cost of producing power went from \$0.30 per kilowatt hour to \$0.05 per kilowatt hour with production from the geothermal system.

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MR. MASTERMAN discussed slide 11, Alaska's Geothermal Resources Seward Peninsula.

- Pilgrim
 - o 92 degrees Celsius at 120 meters
 - o Reservoir approximately 150 degrees Celsius

He said Pilgrim Hot Spring is the most interesting hot spring on the Seward Peninsula. It has a theoretical power capacity of 4 megawatts of electrical power or about 50 megawatts if using the energy as heat. He noted that geology will play an essential role in developing the Pilgrim system because the hot fluids are coming out of the bedrock and getting into the sands and gravel, then migrating laterally and coming up to the surface. He noted that drilling through the sand and gravel right under the hot springs accesses cooler rock underneath. The system's hot water source is not known, but that's where geology comes into play. The system could provide energy to Nome or Graphite One's potential mine towards Teller.

MR. MASTERMAN displayed slide 12, Alaska's Geothermal Resources Alaska Peninsula:

- Makushin 190 degrees Celsius at 590 meters.

He explained that the Makushin system is on the same island as Dutch Harbor and Unalaska. The system could produce power for the communities' fish processing facilities. There is a group investigating system development with scenarios calling for modular generation in 6 megawatt increments with 18 or 24 megawatt plants that could produce power as low as \$0.14 per kilowatt hour, a cost that is competitive with the communities' current electrical production from diesel fuel.

MR. MASTERMAN noted that there are other systems in the area, including one in Akutan that could also generate power for their fish processing facilities. Further to the northeast there are systems at False Pass, Cold Bay, and King Cove.

[4:58:29 PM](#)

MR. MASTERMAN turned to slide 13, Alaska's Geothermal Resources Southeast Region:

- Estimated reservoirs:
 - Goddard - 140 degrees Celsius
 - Baranof - 95 degrees Celsius
 - Bailey Bay - 150 degrees Celsius
 - Tenakee - 65-100 degrees Celsius

He said there are a number of hot springs in Southeast Alaska that are of potential interest. Two that are most well situated are the ones investigated for producing power near Sitka, the Goddard and Baranof hot springs. The granite-related systems are fracture based and nonvolcanic. The systems along the Aleutians have an added advantage of being in volcanic rocks that are sometimes quite a lot more porous and permeable and can make better reservoirs and produce higher volumes of water for more power.

MR. MASTERMAN reviewed slide 14, Key Points:

- Geothermal heat, where technically and economically accessible, is an excellent form of sustainable energy.
- Hydrothermal systems are the most common form of energy extraction from geothermal heat.
- Complex geologic parameters necessary for a viable geothermal resource, all present at one location, is rare.
- Alaska contains several potential geothermal resources.
- New technologies that will help expand geothermal development into less favorable geology are on the horizon.

[5:01:42 PM](#)

CHAIR MICCICHE asked the presenters to finish the presentation at the next committee meeting, due to time constraints.

MS. LONGAN replied the department will accommodate the committee's schedule.

[SB 161 was held in committee.]

SB 155-EXPLORATION & MINING RIGHTS; ANNUAL LABOR

[5:02:18 PM](#)

CHAIR MICCICHE announced that the final order of business would be SPONSOR SUBSTITUTE FOR SENATE BILL NO. 155, "An Act relating to exploration and mining rights; relating to annual labor

requirements with respect to mining claims and related leases; relating to statements of annual labor; defining 'labor'; and providing for an effective date."

He said the committee heard the original bill twice and received a presentation on the committee substitute, version G, during the third hearing. Finding no questions, he solicited a motion.

[5:02:43 PM](#)

SENATOR COGHILL moved to report CSSSSB 155, work order 31-LS1278\G from committee with individual recommendations and attached fiscal note.

[5:03:02 PM](#)

CHAIR MICCICHE found no objection and CSSSSB 155(RES) moved from the Senate Resources Standing Committee.

[5:03:27 PM](#)

At ease.

[5:03:34 PM](#)

CHAIR MICCICHE called the committee back to order.

[5:03:41 PM](#)

There being no further business to come before the committee, Chair Micciche adjourned the Senate Resources Standing Committee meeting at 5:03 p.m.