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# **BIGHORN SHEEP: SUPPLEMENTAL ANALYSIS TO THE FOREST PLAN ENVIRONMENTAL IMPACT STATEMENT—COMBINED TEAM MEETING**

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*Payette National Forest Supervisor's Office—McCall, Idaho*

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**October 19 and 20, 2009**

## **ATTENDEES**

- Christine Bradbury, Payette/Clearwater/Nez Perce National Forests Tribal Liaison (Day 1 only)
- Vic Coggins, Oregon Department of Fish and Wildlife
- Ana Egnaw, Payette National Forest
- Henry Eichman, Enterprise Team (Recreation Economist) (By teleconference Day 1, phone Day 2)
- Steven Goodson, Office of the Governor of Idaho (Day 1 only)
- Chris Hescocock, Payette National Forest
- Maura Laverty, Payette National Forest
- Keith Lawrence, Nez Perce Tribe
- Curt Mack, Nez Perce Tribe
- Clint McCarthy, Forest Service Region 4 Office (By phone, Day 2 occupied habitat discussion only)
- Donny Martorello, Washington Department of Fish and Wildlife (By phone Day 1 only)
- Chans O'Brien, Payette National Forest
- Josh O'Brien, UC Davis
- Darcy Pederson, Nez Perce National Forest
- Laura Pramuk, Payette National Forest (Day 1 only)
- Suzanne Rainville, Payette National Forest Supervisor
- Tim Schommer, Wallowa-Whitman National Forest
- Pattie Soucek, Payette National Forest Planner/Interdisciplinary Team Leader
- Claire Thunes, UC Davis (By phone)
- Dale Toweill, Idaho Department of Fish and Game
- Paul Wik, Washington Department of Fish and Wildlife

## **PROCESS SUPPORT**

- Susan Hayman, Facilitator, North Country Resources, Inc.
- Nikole Pearson, Documentation, Peak Science Communications

## **MEETING OBJECTIVES**

1. Review the risk model output by DSEIS alternative and discuss how this information will be used.
2. Receive a briefing on the latest revisions to the disease model based on the combined team input from September 17, review the model output by DSEIS alternative and discuss how this information will be used.
3. Review and discuss the preliminary options (e.g. modifications to alternatives) developed by the IDT, review the risk and disease model outputs for each; identify other potential alternatives to develop and run through the model.
4. Receive a briefing on how the project will address occupied habitat.

## **ACTION ITEMS**

<b>What</b>	<b>Who</b>	<b>When</b>
Check population estimates for Upper Hells Canyon and Muir Canyon since they seem light in the model	Vic Coggins	Completed
Update population numbers for Main Salmon South Fork estimate and provide to Chans O'Brien	Curt Mack	10.21.09
Josh O'Brien to show sensitivity analysis (effective contact) and submit to interested Combined Team members	Josh O'Brien	10.31.09
Josh O'Brien to determine which herds show up at the left side of the graph at 25/50/100 and submit to interested Combined Team members	Josh O'Brien	10.31.09
Suggest approaches for addressing domestic sheep strays in November and December and provide to the Forest Service	Combined Team	Next team meeting

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## DAY 1—OCTOBER 19, 2009

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### OPENING

#### *Welcome*

Suzanne Rainville (Payette National Forest [NF]) welcomed participants, thanked everyone for attending, and introduced new Payette NF team members. The purpose of today's meeting is to share work completed on the analysis. Rainville reminded participants of the cooperating agencies' roles and reviewed the decision criteria: complying with all Federal laws, developing a viability determination using the risk and disease model, reducing the risk of contact, developing the most effective separation strategies, remaining sensitive to the status of the species, and considering effects to other aspects.

Susan Hayman (North Country Resources) asked participants to introduce themselves and reviewed the meeting objectives, agenda (Appendix 1), and ground rules. The agenda was modified because participants requested starting Day 2 at 8:30 am. The Combined Team asked when standards and guides would be discussed; this item was added to the BIN.

### PROCESS UPDATE

Pattie Soucek (Payette NF) reminded participants of the original goals: ensure habitat is well distributed across the landscape (habitat modeling by season); discover how bighorn sheep and domestic sheep are using the landscape to analyze the risk of contact between the species (quantitative risk analysis); analyze cumulative effects (disease model). Effects beyond the Payette NF need to be considered under cumulative effects; but, the Payette NF cannot dictate how other landowners manage their land.

The agency has discussed occupied habitat definitions and Clint McCarthy (Forest Service) is drafting a white paper on the subject.

### RISK MODEL

Chans O'Brien (Payette NF) discussed the risk model. Unlike the original analysis, the new herd home range model analyzes individual bighorn sheep by season (grazing versus nongrazing) and then aggregates them together to the 95<sup>th</sup> contour line. The foray model analyzes foray behavior by buffering all herd home ranges to a maximum distance of 35 kilometers (km) in 1.0-km bands and incorporating three types of habitat: source habitat, connectivity habitat, and nonhabitat. The herd home range and foray models were overlain with the alternatives to analyze the risk of contact by herd for each alternative.

C. O'Brien first displayed the annual flat-line rates of contact—the annual probability a bighorn sheep would enter an active allotment during the grazing season per 100 rams—and the rates of contact using current total population estimates (rams plus ewes).

This risk model assigned the upper Hells Canyon herds as one population (Upper Hells Canyon) and assigned it to the McGraw herd home range. The Upper Hells Canyon population estimate was determined using the Idaho dataset. Vic Coggins (Oregon Department of Fish and Wildlife) will review the population estimate.

The rates of contact transition into the disease model.

The combined team provided the following feedback and clarification:

- Adding the probabilities for individual herds provides the probability of any individual crossing any allotment.
- A 0.22 probability would equal 1 contact every 4 years.
- C. O'Brien will be analyzing whether one or two allotments are contributing a large percentage of the risk.
- These rates of contact do not include contact probability within herd home ranges, which is assumed 100%.

- The Little Salmon herd was assumed to be animals from the Main Salmon South Fork herd and was set at a percentage of the Main Salmon South Fork herd. If the Main Salmon South Fork numbers double, there will be more activity in the Little Salmon herd.
- Lick Creek and Little Salmon herds were analyzed differently since Lick Creek is presumed to be a lambing area (foray terminus) rather than a herd home range.
- Josh O'Brien (UC Davis) noted that the foray distance distribution may not be uniform in all directions and could be the weakest variable.
- Curt Mack (Nez Perce Tribe) will provide updated population estimates for the Main Salmon South Fork herd.
- Contact rates may be conservative because underestimated deterministic variables were used.

## **DISEASE MODEL**

J. O'Brien presented the disease model structure, inputs, and results. Historic population trajectories illustrate each herd displays a different pattern of die off and growth after disease.

To model impacts of management alternatives, modelers used submodels for population growth; domestic sheep to bighorn sheep disease transmission; disease impact; and inter-herd transmission. The population growth model predicts herd growth in the absence of disease and the number of individuals added each year is dependent on a maximum growth rate, the current population, and the interim herd level. J. O'Brien is using an interim herd level in lieu of carrying capacity since a carrying capacity infers a maximum herd size based on available habitat.

Published results were used for estimating maximum growth rates. McCarty and Miller (1998) estimated growth rates for 16 successful introductions of Rocky Mountain bighorn sheep that were believed to be disease free. The mean growth rate was about 0.23 and rates ranged from 0.10 to 0.40. Data in the Hells Canyon Initiative Report (1997) had growth rates of 0.44, 0.27, and 0.32. The maximum growth rates for the Imnaha, Asotin, and Fox Creek herds ranged from 0.13 and 0.30. From these data, maximum growth rates range between 0.15 and 0.20.

Data submitted to the Payette NF was used to determine current population and interim herd levels. The Combined Team noted the interim herd levels seemed reasonable, providing they were being used for the model and not as management objectives.

The minimum viable population was set at 30 based on published data, and the rate of decline was equal to -0.16 based on ewe survivorship. Extinctions were based on a closed population (i.e., no recruitment between populations). Alternatives that repeatedly drive numerous herds to less than 30 animals should be viewed as being higher risk.

Once a herd has been infected, the model simulates an immediate, all ages die off. The percentage of mortality was drawn from the Hells Canyon Initiative Report (1997) and ranged from 33% to 80%. Following an infection, the herd remains infectious for 1 to 4 years. The Combined Team agreed this variable was realistic. Lamb mortality continues for 4 to 10 years and the percentage of lambs affected ranges from 100% to 50%. A new, all ages die off does not occur during the period of continued lamb mortality.

J. O'Brien displayed the model results for the draft supplemental environmental impact statement (SEIS) alternatives using the above parameters and a 25% rate of effective transmission. The model was run for 200 years and each scenario was run 100 times. The model output displayed the number of herds extirpated over 200 years and the probability of that outcome.

The Combined Team provided the following feedback and clarification:

- The Asotin and Fox Creek herds have the best disease-free growth rates.
- The model does not reveal information about immunity.
- The model can't address every situation but includes as much data as possible.
- Participants recommended running a sensitivity analysis.

- Because the model does not include recolonization, once a herd is extirpated, herds further away become safer.
- The model does not include monitoring or adaptive management but operates as though the situation will not change in 200 years. The Forest Service will respond if problems occur.
- The disease model helps the Forest Service identify areas of potential risk.
- The model will be used to analyze the cumulative effects of adjacent landowners.
- The disease model indicates that reducing the risk of contact reduces herd loss.
- The model cannot incorporate the many mechanisms likely protecting herds, including behavior, possible immunity, and management.
- Combined Team members were concerned that some of the model parameters were drawn from data from other states and terrain.
- Rainville will be conducting a viability determination and will have to rely on Forest Service biologists, UC Davis contractors, and the team's feedback.

## PRELIMINARY OPTIONS

After analyzing the draft SEIS alternatives, the Payette NF began developing other options that used identifiable ground features to create an alternative that reduced the risk of contact to 0–2%.

### *Test Options*

These options were based on Alternatives 7G and 7J and modeled habitat. Trailing routes would not be allowed within the areas deemed unsuitable for domestic sheep grazing.

Test 2—Boundaries were drawn based on topographic features and looked at effects of grazing within herd home ranges.

Test 3—Similar to Test 2 but excluded more areas of habitat from domestic sheep grazing.

Test 4—Very similar to Test 3 except it excluded habitat around Grassy Mountain and Vance Creek from domestic sheep grazing.

The Combined Team provided the following feedback and clarification:

- If population estimates were increased, the risk of contact would also increase.
- The alternatives already reduce the risk of contact from 100%.
- Test 4 lowers the cumulative risk to 11%, but the cumulative risk for all alternatives and options is above the goal of 2%.
- The next step could be to analyze reducing risk using standards and guidelines.
- Tests 2, 3, and 4 reduce risk to the Main Salmon South Fork and Little Salmon, which are two herds that were repeatedly extirpated in previous models.
- These options illustrate that modifying the boundaries can reduce risk to the herds while still allowing domestic sheep grazing.
- Tests 2, 3, and 4 do not include herd home range rates of contact while the alternatives displayed earlier do; the options can't be compared with the alternatives at this point. **C. O'Brien will modify the table so the alternatives and options can be compared to one another tomorrow.**
- The risk table does not include stray domestic sheep movements during November and December. Rainville asked for feedback about how to qualitatively analyze domestic sheep movements.

### *Buffer Options*

These options analyzed how far a bighorn sheep would have to travel before risk decreased. C. O'Brien displayed maps of the buffers and a table of the risk for each option (from the herd home range to a 30-km buffer in 5-km increments). These options illustrated that habitat, not distance from the herd home range, reduces risk.

### ***Other Options***

The Combined Team provided the following feedback:

- Standards and guidelines should be included that require monitoring along the “highway” at Josephine Lake to see if bighorn sheep are crossing that 3-mile gap.
- Is it possible to graze within the foray model and herd home range but still reduce the overall risk to the Salmon River population?

The Combined Team requested maps of the west and east side of the Payette NF that included Test 2 with the bighorn sheep habitat, foray model, 25-km line, and probability map incorporated. The Forest Service agreed to supply a Forest Service map and copies of Test 3 and 4 for reference during a Tuesday morning breakout session.

### **CLOSING REMARKS AND ADJOURN**

Hayman reviewed the agenda for Day 2 and the meeting adjourned at 5:55 PM.

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## DAY 2—OCTOBER 20, 2009

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### OPENING

Soucek asked the Combined Team to review the Payette NF options and provide feedback.

#### *Team Epiphanies*

Before the mapping exercise, the Combined Team provided the following feedback:

- The model does not include adaptive management and the Forest Service would respond if problems arose; the model should be used as an indicator only.
- Members asked J. O'Brien to provide the mean length of time for extirpation.
- The risk of contact is the main driver for alternative development; the disease model will help inform the decision and provide information about cumulative effects.
- The model could be run for 20 years instead of 200, but the risk is higher when the timeframe is shorter—the results would be quantitatively similar but worse.

### OTHER OPTIONS

Hayman reviewed the agenda, Soucek reviewed the maps available, and the Combined Team broke into groups to develop other options. After reconvening as a large group, the Combined Team provided the following suggestions:

- Remove grazing in the 95% herd home range on the west side since the literature is very clear that grazing should not be allowed within the 95% herd home range.
- Consider labeling Lost Valley as nonhabitat and open it for domestic sheep grazing. It is an island of marginal habitat surrounded by large areas of nonhabitat that could not support a bighorn sheep population.
- Graze domestic sheep within the 95% herd home range on lower Lick Creek. Maura Laverty (Payette NF) responded that domestic sheep travel to Lick Creek summit and north in the fall so risk would be involved with this option.
- Because Test 2 has higher levels of residual risk, begin with Test 4 and remove high-risk habitat at Josephine Creek from domestic sheep grazing and smooth the boundaries across Squaw Meadows.
- Document reasons for grazing adjacent to the 95% herd home range. Grazing should only be allowed when nonhabitat is adjacent to the 95% line (this is especially important as other areas of the country seek to adopt the Payette approach).
- Grassy Mountain has the highest potential of being converted to a cattle allotment.
- Trail animals between the south end of Josephine Lake and the north end of Victor–Loon only if strong adaptive management direction were included. Include a Forest management guideline to protect bighorn sheep populations as they and sightings in this area increase.
- The next highest risk area would be south of Grassy Mountain—remove from domestic sheep grazing.
- Consider grazing outside the foray model on the south end of the Payette NF.
- Clearly explain how boundaries were developed.

Rainville reminded participants on the importance of maintaining a reasonable range of alternatives and that a thorough discussion about each alternative will be included in the National Environmental Policy Act (NEPA) document.

### ***Round Robin Feedback on Disease Model and Options***

The team provided the following feedback:

- The Combined Team thanked the interdisciplinary team (IDT) for their work on the new analysis—the new approach is helpful.
- Reducing risk of contact is important.
- Don't lose track of other important issues: 1) domestic sheep movements are a source of risk and 2) the analysis is starting with depressed populations. The Forest Service needs to allow for future recovery opportunities.
- Would like to see model results if populations were doubled.
- Still cautious of the disease model since variable sensitivity is unknown.
- Perhaps 100 runs are not enough.
- The Payette NF has a map of areas at risk for straying domestic sheep and has been compiling data from lost animal records submitted by permittees since 1929. Straying domestic sheep will be discussed in the document.
- The 2% risk of contact value came from another, similar model. This model will provide a risk of contact that is specific to these populations.

### **PROJECT APPROACH TO OCCUPIED HABITAT**

McCarthy joined via phone to discuss the Forest Service's approach to occupied habitat.

Soucek framed the discussion by reminding the Combined Team that the remand required the Payette NF to conduct an analysis and provide for viable bighorn sheep populations. The Payette NF analyzed quality and quantity of habitat across the Forest, and then examined how the bighorn sheep and domestic sheep were using the landscape in and around the Forest. Habitat is not the limiting issue—risk of contact affects viability. The Payette NF reviewed the draft SEIS and list of significant issues not adequately or correctly addressed; the analysis was framed to address these significant issues. In the draft SEIS, the Payette NF stated the Geographic Population Range (GPR) was occupied habitat. The Payette NF has new knowledge, a better risk analysis, and new models, and risk of contact has become the driving factor. The Payette NF cannot determine how much habitat is occupied and is framing the analysis to answer the Chief's requirements regarding disease transmission.

McCarthy reviewed the remand carefully and the Chief's expectations. In both, the term occupied habitat was nebulously defined, always used in terms of the Forest Service's responsibility to provide for viable populations, and always linked back to disease transmission. Definitions of occupied habitat within the literature agree that occupied habitat can be defined by the presence of a species, but a species' absence does not indicate nonoccupied habitat. Defining occupied habitat is not germane to the risk of contact discussion. The Forest Service has a large database of how bighorn sheep use the landscape—the percentage of time they are within the herd home range, percentage of time rams are on forays, and how often they overlap domestic sheep. Risk of contact is being analyzed, not occupied habitat.

Tim Schommer (Walla–Whitman National Forest) added that any definition of occupied habitat as part of the NEPA process would be arbitrary.

The Combined Team provided the following feedback:

- What the Payette NF does will set a precedent for other Forests that will be lacking the robust dataset the Payette NF has available. The Payette NF must clearly communicate the science so other Forests are able to understand how the decision was made.
- The science of separation is very clear, although how much space is needed is debatable. This document must include the reasons for separation and reducing the risk of contact.
- The Oregon Department of Fish and Wildlife sheep plan references current and historic distribution or range, not occupied habitat.
- The States are going to have to provide leadership regarding bighorn sheep conservation goals.

- The chosen alternative will become the separation strategy.

Rainville concluded the discussion by noting she appreciated the Forest Service's ability to step back and analyze the definition of occupied habitat. The issue was not taken lightly and will be addressed in the final SEIS. This document has to be about developing a separation strategy and not about defining occupied habitat, which would be based on weak science.

### ***Options and Models in Light of Occupied Habitat Approach***

The Combined Team did not have additional feedback on the options or models.

## **ECONOMIC ANALYSIS**

Henry Eichman (Enterprise Team) provided an update on the economic analysis. The economic model has not changed significantly. The inputs have been adjusted as suggested, but the impact areas have remained the same. Eichman has also been analyzing environmental justice issues.

## **EXTIRPATIONS AND OPTION TEST 5**

### ***Extirpations***

J. O'Brien displayed a table of average years to pseudo-extinction for the McGraw and Main Salmon South Fork herds for all alternatives and options based on a 25% probability of effective contact. According to the model, the McGraw herd will be extirpated in 30–60 years; the Main Salmon South Fork herd in 20–43 years. These data indicate if a herd survives past the time period given, they will not be extirpated for 200 years. J. O'Brien also displayed a table of herd extirpation probability. The extirpation numbers would look the same if the time period was reduced to 100 or 50 years because the populations are currently on the brink of extirpation.

### ***Option Test 5***

C. O'Brien displayed a graphical representation of Test 5, which was built off of Test 4 but excluded Josephine Lake from domestic sheep grazing. J. O'Brien recommended modifying the model and excluding the Lost Valley area from suitable bighorn sheep habitat and comparing model results.

## **TIMELINE AND NEXT STEPS**

### ***BIN Items***

1. Discuss standards and guidelines—Rainville noted it would be helpful to receive feedback on standards and guidelines so the team agreed to meet again after the first of the year.
2. How to use extirpation simulations in Forest Service planning—the Forest Service IDT will continue this discussion.
3. Which variable/parameters create the biggest change in extirpation risk and risk of contact?—the Forest Service IDT team will follow up.
4. Qualitative way to assess risk of domestic sheep strays in November and December—the Forest Service has some mapped stray areas and historical data from permittees; this will be a qualitative discussion by the Forest Service IDT for each alternative.
5. How does Test 4 address domestic sheep strays into main Salmon watersheds?—will be a qualitative discussion by the Forest Service IDT for each alternative.
6. What is the significance of grazing inside the foray model?—will remain an awareness issue for the Forest Service IDT.
7. Why not graze within the foray model?—will remain an awareness issue for the Forest Service IDT.

8. Where would we be with risk with Upper Hells Canyon and Main Salmon South Fork if populations were doubled?—According to the model, the risk would double; the Forest Service IDT will consider this item for population recovery.

9. What do we say if all of our alternatives are over 2% risk of contact?

- Need to see the range of outputs and sensitivity
- Something to consider as we go to effects

—The 2% goal was developed for the Sierra Nevada model and may be different for the Payette NF model. This item will remain an awareness issue for the Forest Service IDT.

### *Action Items*

Hayman reviewed the action items.

### *Timeline/Milestones*

The Payette NF needs to complete the following steps: analyze the alternatives and write adaptive management and Forest Plan language. The Payette NF has three options:

1. Release the final SEIS and record of decision (ROD) simultaneously.
2. Release the final SEIS for a 30-day comment period, then release the ROD.
3. Release a new draft SEIS, hold another comment period, respond to comments, and release a final SEIS and ROD simultaneously.

The Forest Service is also considering holding public meetings before releasing any documents. Documents are expected to be released early 2010.

The Combined Team provided the following feedback:

- If documents are released during the Idaho legislative session, the Forest Service may want to consider how they will inform the legislature and Governor's Working Group.
- The Payette NF will develop a comprehensive monitoring plan.

### *Meeting Schedule*

A meeting was tentatively scheduled for January 4 and 5, 2010. An alternative date is January 14-15, 2009

## **CLOSING REMARKS**

Rainville thanked everyone for attending. The meeting adjourned at 3:00 PM.

## **HANDOUTS**

1. Agenda, 1 p.

## **CITED MATERIALS**

McCarty, C. W. and M. W. Miller. 1998. Modeling the population dynamics of bighorn sheep. Colorado Division of Wildlife Special Report 73. Fort Collins, CO.

U.S. Bureau of Land Management. 1997. Restoration of Bighorn Sheep to Hells Canyon: the Hells Canyon Initiative. Written by the Hells Canyon restoration committee. USBLM Tech. Bulletin No. 97-14.

## APPENDIX 1—AGENDA

### Bighorn Sheep: Supplemental Analysis to the Forest Plan Environmental Impact Statement Combined Team Meeting

October 19, 2009: 12:00 p.m. – 6:30 p.m.

October 20, 2009: 9:00 a.m. – 3:00 p.m.

Payette National Forest Supervisor’s Office Conference Room  
800 W. Lakeside, McCall, Idaho

#### Meeting Objectives:

1. Review the **risk model** output by DSEIS alternative and discuss how this information will be used.
2. Receive a briefing on the latest revisions to the **disease model** based on the combined team input from September 17, review the model output by DSEIS alternative and discuss how this information will be used.
3. Review and discuss the **preliminary options** (e.g. modifications to alternatives) developed by the IDT, review the risk and disease model outputs for each; identify other potential alternatives to develop and run through the model.
4. Receive a briefing on how the project will address **occupied habitat**.

#### Monday, October 19

Time	Topic
12:00 p.m.	<b>Opening</b> <ul style="list-style-type: none"> <li>• Welcome, introductions and opening remarks – Suzanne Rainville, Payette Forest Supervisor</li> <li>• Meeting overview, group agreements – Susan Hayman, Facilitator</li> </ul>
12:15 p.m.	<b>Process Update</b> – Pattie Soucek, Payette National Forest BHS Team Leader
12:30 p.m.	<b>Risk Model</b> – Chans O’Brien, Payette National Forest; Josh O’Brien, UC-Davis <ul style="list-style-type: none"> <li>• Overview of the model refinements</li> <li>• Review and discuss model output by DSEIS alternative</li> <li>• Discuss how the information will inform the decision</li> </ul> <p><i>Outcomes: Clarification and understanding of the model results and how they will be used. No further refinement to the risk model is expected.</i></p>
1:00 p.m. (includes 15-minute break)	<b>Disease Model</b> – Chans O’Brien, Josh O’Brien <ul style="list-style-type: none"> <li>• Overview of the model refinements</li> <li>• Review and discuss model output by DSEIS alternative</li> <li>• Discuss how the information will inform the decision</li> <li>• Feedback on the model and/or results</li> </ul> <p><i>Outcomes: Clarification and understanding of the model results and how they will be used; final feedback/suggestions for model improvement. Further refinements of the disease model may be considered.</i></p>

Time	Topic
3:45 p.m.	<b>Break</b>
4:00 p.m. (includes 15-minute break)	<p><b>Preliminary Options</b> – Pattie Soucek, Chans O’Brien</p> <ul style="list-style-type: none"> <li>• Presentation of the preliminary options</li> <li>• Review and discuss model outputs for each preliminary option</li> </ul> <p><i>Outcomes: Clarification and understanding of the preliminary options and their outcomes to jumpstart the team’s thinking about further feedback and development of additional options for discussion on Day 2.</i></p>
6:30 p.m.	<b>Closing remarks and Adjourn</b> – Pattie Soucek

**Tuesday, October 20**

Time	Topic
9:00 a.m.	<p><b>Opening</b></p> <ul style="list-style-type: none"> <li>• Announcements – Suzanne, Pattie</li> <li>• Epiphanies -- Team</li> <li>• Review of the Day 2 agenda – Susan</li> </ul>
9:10 a.m. (includes 15-minute break)	<p><b>Other Options</b></p> <ul style="list-style-type: none"> <li>• Collect feedback on IDT proposals</li> <li>• Identify other potential options</li> </ul> <p><i>Outcomes: Identification of any additional options for further development by the IDT.</i></p>
11:45 p.m.	<b>Lunch</b> (on your own)
1:00 p.m.	<p><b>Project Approach to Occupied Habitat</b> – Clint McCarthy, Forest Service Intermountain Region Office; Josh O’Brien</p> <ul style="list-style-type: none"> <li>• Presentation of approach</li> <li>• Team Q&amp;A and feedback</li> </ul> <p><i>Outcomes: Clarification and understanding of the approach; Forest Supervisor hears team members perspectives. No refinements to the approach are expected.</i></p>
2:30 p.m.	<p><b>Timeline/Next Steps</b></p> <ul style="list-style-type: none"> <li>• Action Items – Susan</li> <li>• Timeline/milestones – Pattie</li> <li>• Meeting Schedule – Susan</li> </ul>

2:50 p.m.	<b>Closing remarks</b> – Suzanne Rainville
3:00 p.m.	<b>Adjourn</b>

Working Draft

## APPENDIX 2—TRANSCRIBED FLIPCHARTS

**Model Def. of Contact**

per year per 100 rams  
 ...that BHS would make it into active allotment during grazing season

and/or

per year by current pop. estimates  
 (total animals—rams + ewes)

1

**Interim Herd level**

Hells Canyon

- 1) Determine Max
- 2)  $\sum P_{\max i}$   
 $i$  = herd in Hells Canyon

Effective contact = Results in transmission of disease  
 (25, 50, 75, 100%)

2

**Other Options**

Generally described

- Test 4 w/ area around Josephine lake removed from D.S. grazing
- Monitoring “The Highway” (Warren Wagon Rd, Secesh Summit), especially as pop grows. Has already been a sighting here.
- Where can we graze w/in foray model +95% and still reduce overall risk to Salmon River pop?

3

**Options**

Modified G/J based on modeled habitat

Test 2: \* lines based on topographic features  
 \*Some grazing in herd home range

Test 3: \*\*“Smoothed” from Test 2  
 \*excluded more BHS habitat

Test 4: \* Excludes Grassy Mt. Vance Ck

4

**Options ?**  
From T-2

- 1) West side
  - a. Don't graze herd core home range
  - b. Lost Valley area → marginal BHS habitat. Remove from map. IOF this is not habitat, maybe Ok to graze w/DS  
 (remove risk). No risk on the landscape
  - c. Can graze DS up to 95% because of non-BHS habitat adjacent to line. (Payette-specific situation)

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**Options (cont'd)**  
From T-4

- 2) Graze DS within the 95% on lower Lick Creek
- 2) East Side
  - a) Remove high risk habitat at Josephine Lake from DS grazing.
  - b) “Smooth” line across Squaw Mdws (pink line)
  - c) Strong adaptive mgt strategy between south end of Josephine & N. end of Victor-Loon. (As sightings increase.)
  - d) High risk area south of grassy Mt.  
 -Remove from DS grazing

6

### BIN

- (1) Team discussion on stds & guides (to be determined)
- (2) How to use extirpation simulations in FS planning (IDT discussion topic)
- (3) Which variables/parameters create biggest change in extirpation risk? Risk of contact? (IDT follow-up)
- (4) Qualitative way to assess risk of DS strays Nov/Dec? Have mapped high risk areas. (IDT follow-up by alternative)
- (5) How does Test option 4 address how DS stray down watershed into main Salmon. (IDT follow-up by alternative)
- (6) What is the significance of grazing inside the foray model?

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### BIN (cont'd)

- (7) Why not graze within foray model? (explain consistency between #6/#7) (awareness issue for IDT)
- (8) Where would we be w/ risk with upper HC & Salmon SFK if we doubled pops? Double the risk (IDT consider for Pop recovery)
- (9) What do we say if all of our alternative are over 2%\* annual risk of contact?

- Need to see range of outputs/sensitivity
- Something to consider as we go to effects.

New model will run risk differently than DSEIS model.

With the exception of Alternative H, too much risk remaining under other DSEIS alts.

\*For the Sierra Nevada model, may be a different % for our model

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### Action items

- (1) Check pop estimates for upper Hells Canyon/Muir Canyon-seems light in the model. (Vic)
- (2) Update numbers for Main Salmon/ South Fork estimates (Curt)
- (3) Josh to show sensitivity (effective contact) analysis (for Paul/Donny/Dale)
- (4) Which herds show up at the "left side of the graph" at 25/50/75/100
- (5) Team provided suggested approaches for addressing DS strays Nov/Dec provide to FS. (next team mtg.)

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