

Summary Report from Interagency Bison Management Plan Meeting November 27-28, 2012



Presented 11 Dec 2012 by meeting facilitator Scott Bischke

The following summary report reflects activities at the November 27-28, 2012 meeting of the Interagency Bison Management Plan (IBMP) Partners, held at the Gran Tree Plus Best Western Hotel in Bozeman MT. This report comes from the notes and flip chart records of facilitator Scott Bischke¹. The report will be marked “Facilitator’s Draft” until formal Partner agreement at the start of their next meeting. The nine Partner attendees were Don Herriott (APHIS), Tom McDonald (CSKT), Earvin Carlson (ITBC), Christian Mackay (MBOL), Marty Zaluski (MDOL), Pat Flowers (MFWP), McCoy Oatman (NP), Dan Wenk (NPS-YNP), and Mary Erikson (USFS-GNF). In addition to those at the deliberative table, ~20 staff members from across IBMP organizations and ~30 members of the public were present. Scanned attendance sheets are available from the facilitator.

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Action Items Identified

Table 1.—Action items identified during this meeting

#	Who	What	By when
1	DW (NPS staff)	DW volunteered NPS personnel to review the ROD and provide the answer to whether seroprevalence reduction was explicitly called out as a goal.	ASAP
2	SB all Partners	SB to send out most recent draft of annual report to Partners for Partner review and return by Dec 14.	Dec 14
3	AJ	AJ to send out a request for bison education funding to Partners and NGOs.	ASAP
4	SB	Scott noted that the planned revamp of ibmp.info library will be pushed into 2013 due to funding constraints. Also, Scott will track and act as final repository for 2x North Side AM documents. Post to ibmp.info per the draft Partner Protocol under development.	Jan, 2013
5	PJ all Partners	PJ to incorporate NPT requests into the Winter Ops Plan and send out to Partners by Dec 7; Partners to review and make comments/edits back to PJ by Dec 14.	Dec 7 PJ sends out; Dec 14 Partners return
6	PJ, SB all Partners	PJ to update document per input and send final document to SB by Dec 17; SB to post to Partners for electronic signatures per Partner Protocols by Dec 18; Partners to provide signatures by Dec 31.	Dec 17 PJ→SB; Dec 18 SB send out with process; Dec 31 Partners complete signing
7	PF	PF volunteered to draft an alternative AM proposal for increasing Zone 2 to include new North Side tolerance area.	To distribute before next IBMP meeting

Agreeing to previous meeting minutes

The facilitator asked if there were any objections or changes to the meeting minutes from the August 2012 IBMP meeting. MDOL requested one small change and the Partners agreed to accept the meeting notes following that change being made. With that change the Partners agreed that the meeting minutes from the August 2012 IBMP meeting are considered final and may be posted as such to IBMP.info.

Risk reduction and the importance of seroprevalence as an IBMP driver

SEROPREVALENCE AND BRUCELLOSIS (STEVE OLSEN)

Dr. Steve Olsen of APHIS's National Animal Disease Center spoke on science and challenges associated with bacteria of the genus *brucella*, with most focus on *b. abortus*. During preparation for his talk, Dr. Olsen considered questions from the CWG (see Appendix A); he addressed those dealing with science in his presentation, plus during discussion (see below). The presentation can be reviewed at <http://ibmp.info/Library/20121127/20121127.php>. A brief overview of some of the key points from the talk (some copied verbatim) follows:

- There are many species of the *Brucella* genus, each particular to specific hosts (e.g., bison and cattle, dogs, swine, voles).
- Brucellosis in feral swine (*B. suis*) can be particularly problematic.
- Brucellosis in humans is rare in the USA, though potentially serious.
- Protective immunity against *Brucella* is primarily cell-mediated.

- A lipopolysaccharide structure on *B. abortus* is the immunodominant antigen for antibody response.
- Immunologic responses differ between ruminants (e.g., bison, cattle, elk).
- Vaccination alone will not eradicate brucellosis.
- Vaccines are very good at reducing transmission and clinical disease but very poor at preventing seroconversion or transient infection after exposure
- Bison are less susceptible to *Brucella* infection than cattle
- RB51 has been tested as a calfhood vaccination (in cattle and bison) against *Brucellosis abortus*. Additionally, tests have been done giving a booster following initial inoculation. Varying rates of efficacy to stop abortion and infection are seen for each situation, and for cattle vs bison. Boosters (RB51) have been seen to decrease abortion rates in bison. Efficacy comes from short term data—one cattle study showed that by 6 years after vaccination, abortions began again.
- Minimal work has been done on elk and brucellosis.
- Dr. Olsen’s key thoughts on eradicating brucellosis from the GYA: (1) Current status—Good vaccine and coverage for cattle; Moderately effective vaccine for bison; No vaccine currently for elk; (2) Vaccine delivery is an issue; (3) Would need to combine vaccination with test and removal
- Dr. Olsen’s thoughts on the concept of “natural immunity”: (1) Intracellular environment and immunologic responses to *Brucella* complex; (2) Many redundancies and feed-back loops; (3) *Brucella* a excellent pathogen and stealthy; (4) Does not believe a single gene of the host regulates susceptibility/resistance
- Dr. Olsen’s thoughts on seropositives: (1) No easy way to determine if “exposed” or infected; (2) We’re evaluating new technology for detecting infection, but high risk approach (Aperio); (3) How seropositives are handled should be based on control program objectives; (4) Contribution to herd immunity can be argued both pro and con.
- Opportunities and Constraints for Development of New Vaccine: Big Challenge is the Select Agent Act; Challenges in Developing a New Vaccine include (a) “low hanging fruit” have been picked, (b) laboratory animal models do not replicate responses in natural hosts, (c) Cost; this group and others need to focus on solving key management problems, not just study *Brucella*
- Opportunities exist for new vaccines



Figure 1.—Steve Olsen of the APHIS Ames Iowa facility talks to Partners, staff, and public about latest brucellosis research, with a focus on the importance of seroprevalence.



Figure 2.—John Treanor of NPS talks to Partners, staff, and public about management implications of brucellosis seroprevalence in bison.

- Other Related Research includes Sequencing Bison Genome with Texas A&M, ISU, and Univ. of Maryland; Initiating transcriptomics studies; Exploring Immunogenicity of a Nanoparticle Vaccine; Evaluating effect of synthetic adjuvants on immune responses by bison and elk; and Collaboration with University of Wyoming scientists on efficacy of adult Vx in 2014

DISCUSSION

Discussion on the importance of seroprevalence was held after Dr. Olsen's talk. Some key points and questions from those discussions are recorded below:

- Homeland Security does not differentiate between species of *Brucella*. They need scientific not economic arguments to consider removing *B. abortus* from the Selective Agent List.
- Just because an animal is seropositive does not mean that it has immunity to brucellosis.
- Brucellosis vaccination studies are done in a mouse model. In Steve's opinion such a model likely provides no predictive value in bison.
- Vaccination will never eradicate brucellosis; there is no such thing as 100% protection.
- Vaccines are good at preventing animals from becoming clinically sick. They are good at reducing brucellosis transmission because they help prevent shedding of the bacteria; however vaccines do not prevent sero-conversion.
- Many countries do not pasteurize cow milk so if you vaccinate an animal you must worry about the vaccine (often a weakened or dead form of the bacteria) passing through their milk to humans, or for any species passing through the milk to their own young. Thus, you should not vaccinate pregnant females if there are public health concerns.
- We should seek to first stop abortions and disease transfer, then later eliminate the disease.
- We need to combine vaccination with test and removal—how this is done is a management decision, not a science decision.
- *Brucella abortus* is stealthy—it takes 10^7 of these cells in for bison to develop a fever versus 50 TB cells!
- Bison being tested at APHIS Iowa facility are not YELL bison and thus likely genetically different to some degree.
- If we could improve mucosal immunity we could prevent *Brucella* from crossing the membrane and causing infection.
- Antibody responses do not correlate to infection. The animal may have cleared infection and gained immunity so hard to know if antibody response is good or bad.
- Per Steve: Seroprevalence is an indicator of transmission, the higher the seroprevalence the higher the likely rate of transmission.
- In early 1990s it was likely \$15-20 M to bring (for example) RB51 to full licensure as a vaccine. Now a guess would be that it would be twice as costly.
- Models do not work; instead studies need to be done on the target animal. Also, studies should focus on helping solve the problem, not just on the science of brucellosis in general. At this point we are in need of applied research. We generally have sufficient money for research (of course one always could use more), but what we really need is new minds and ideas.
- Efforts underway to sequence the bison genome will help us understand how bison are reacting to infectious agents.
- For cattle, if an animal gets disease and aborts, then do they abort again? Ans = no, they likely develop high immunity and don't abort again.
- What causes latent disease to suddenly express itself?
- Can stress trigger the onset of disease?
- With an effective vaccine you can reduce but not eliminate seroprevalence. Maybe the goal should be to reduce transmission.
- We need first to determine our management goal around seroprevalence—isn't it to have no brucellosis in cattle?

- Is it possible to make an effective cattle vaccine against brucellosis? Ans = RB51 is effective to stop abortions, but not to stop sero-conversion. From a veterinarian perspective, it is going to be very difficult to go beyond that level of efficacy. You need to define the goal to say if a vaccine is effective or not at achieving that goal.

MAINTENANCE OF BRUCELLOSIS IN YELLOWSTONE BISON: IMPLICATIONS FOR MANAGEMENT (JOHN TREANOR)

Following Dr. Olsen's talk on the science of brucellosis infection and possible reduction, John Treanor of the Yellowstone Center for Resources provided a talk about management implications of the maintenance of brucellosis in YELL bison. John requested that his talk not be posted since two peer-reviewed publications are available that cover the discussion. Those publications can be found under the meetings notes at <http://ibmp.info/Library/20121127/20121127.php> Key points from John's talk follow:

- John noted that management culls have multiple implications, including altered sex ratio, reduced female cohorts, effects on sub populations, bison genetics, no effect on brucellosis infection
- In particular John wanted to address CWG Risk Recommendation 4, which includes:
 - ...develop a practical test on live animals to distinguish between infected and resistant animals.
 - ...develop the tools to allow us to stop managing animals as if seropositive is equivalent to 'infectious.'
- Methods of brucellosis testing include blood tests, trap side screening tests, and bacterial cultural, each of which has positives and negatives with respect to such things as turnaround time, accuracy, what is detected (e.g., antibodies vs live bacteria). Key points in seroprevalence and infection include:
 - Animals that have been exposed to *Brucella abortus* can be seronegative or seropositive (i.e., have detectable antigens in their blood based on contact with the *Brucella abortus* bacteria).
 - Animals that test seronegative may actually have been in contact with *Brucella abortus* and may, at a later date, become seropositive (i.e., sero-convert).
 - Animals that are seropositive may or may not at the time of testing be, or sometime in the future become, infected by *Brucella abortus*.
 - Only animals with active *Brucella abortus* infection are infectious. These animals must—whether tests indicate or not—have been seropositive before passing along infection.
- The large (1604 animals) bison slaughter in 2008 allowed for seroprevalence study. 46% of animals were seropositive.
- NPS sought to determine if there was correlation between seroprevalence and active infection. They propose a conceptual model that shows three phases (Figure 3). Bison are most likely to become infected early in life and have yet to build immunity (ages 0-2 when not reproducing), most likely to be infectious and pass along the disease when they are still young (age 2-4) but beginning to reproduce, and most likely be in a recovery phase after age 4, where they better resist the disease and hence are less likely to pass it along.
- Given this conceptual framework and other modeling, John showed that NPS could relate seroprevalence to active infection with a known degree of statistical certainty. Using this information then allows Partners to remove bison from the population that are most likely to be infectious, generally young pregnant females.
- John also showed evidence that (a) seasonal food restriction may reduce immune defenses, and (b) nutritional condition may reduce the effectiveness of vaccination.

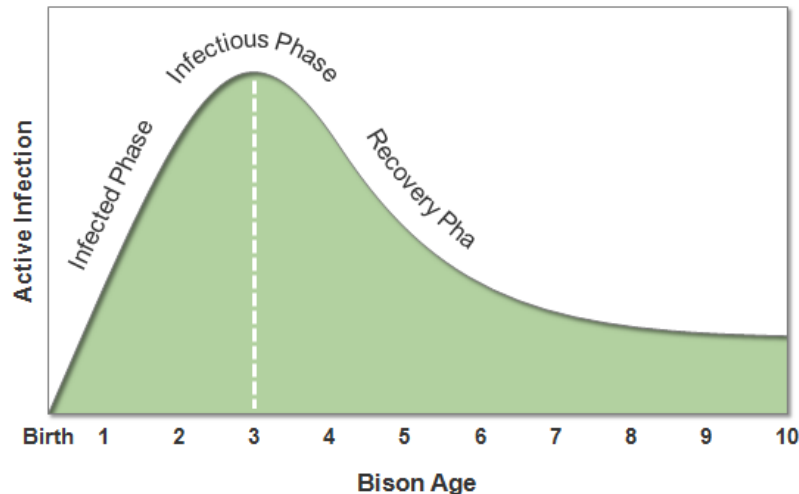


Figure 3.—NPS conceptual model relating active brucellosis infection to age in bison.

DISCUSSION

Discussion on the importance of seroprevalence was held after John Treanor's talk. Some key points and questions from those discussions are recorded below:

- Serological testing detects antibodies, not live bacteria. Bacterial cultures are grown from the tissue of dead animals and can detect live bacteria (i.e., active infection).
- Seroprevalence seems to increase with age as individual bison have more chance to be exposed to brucellosis as the years pass.
- In YELL we did see some conversion of vaccinated bison to becoming actively infected. The vaccine for bison is not terribly effective.
- Generally, the higher nutritional health = the higher the immunity response
- What are the management implications of this work? John—It would be useful to first do vaccination to increase herd humanity and decrease seroprevalence. Next we should select high probability infectious animals for removal (John presented a table in his presentation showing these probabilities).
- When should we vaccinate? Ans = Likely early in the calendar year 12-16 weeks before infection might occur (i.e., during calving).
- Quality of food does not differ so much because of location but instead by time of year.
- While talking about disease reduction is well and good, we are struggling to find acceptance outside of YELL for quarantine animals that are proven disease free. So we must recognize not only with disease reduction as a goal, but also the need for increased public tolerance for bison outside of YELL.
 - One aspect of the Statewide Bison Management is finding acceptable places for bison in Montana away from YELL.
 - Translocation of bison and the fact that some people are against it, is not just a seroprevalence issue. Other things come into play like competition for grass, safety, etc.
- As long as we have infected elk, then we must decide if the question of seroprevalence reduction is even a reasonable goal? Is this part of the ROD acceptable, or should it be rethought? So what if you get to 0 seroprevalence—what have we accomplished given a brucellosis reservoir in elk? Are we really protecting the livestock industry by decreasing seroprevalence in bison only?
- Instead of a blanket goal to reduce seroprevalence in bison, why not put all of our efforts toward decreasing transmission?

- I wonder what else we are removing if we target a certain age group; is the process of natural selection being impacted? Response #1 = correct, we can't control for everything. Response #2 = Agreed, this could be an issue but removal of the 2-3 year old is still a lot better than killing all the animals coming out of the Park; i.e., the proposal is a better way to continue an ecological process.
- A question arose regarding if both decreasing transmission and decreasing seroprevalence were called out as explicit goals in the 2000 ROD. Was seroprevalence reduction considered a goal of the ROD, or more a tool? ****Action item 1**—DW volunteered NPS personnel to review the ROD and provide the answer.
- There is a benefit to decreasing seroprevalence: less transmission. Perhaps we should set the goal to be getting seroprevalence in bison down to the level of that in elk.
- We need to approach this issue through the lens of allocation of resources. The 2008 GAO report asked for clearly articulated goals. We are clearly doing well as we have had no transmission. So do we want to expend more dollars to decrease seroprevalence beyond where we are today? We need to spend \$s on assuring disease transmission is zero.
- For we livestock owners, stopping transmission is the number one goal. If we can't operate then the GYA will undergo an enormous change since we are good stewards of a great deal of open land.
- Yes, livestock owners manage large landscapes that wildlife use. We manage fish and wildlife where people live and recreate.
- We need to focus on the bison not livestock owners. We used to have millions of bison, now we are talking about hundreds. This is a huge impact to my people.

PARTNER DECISIONS ON CWG RECOMMENDATIONS

One goal for having Steve and John speak was to address a decision pending on the following CWG recommendations (see meeting reports from Nov2011, Feb2012, May2012):

CWG Population Recommendation 13.—Develop and work with the livestock industry to implement an effective cattle vaccine and protocol to reduce the risk of transmission and make bison presence/translocation more acceptable. Support/secure funding for ongoing vaccine research.

Risk Reduction Recommendation 4.—(a) ~~Strongly encourage continued funding and research to develop a practical test on live animals to distinguish between infected and resistant animals.~~ (b) Given the epidemiological importance of building 'herd immunity,' it is important to develop the tools to allow us to stop managing animals as if seropositive is equivalent to 'infectious.'

The Partners decided against acting on either of these CWG recommendations because:

- (1) A vaccine more effective than that already available does not sound possible or likely.
- (2) The Partners see no consensus on dropping the concept of decreasing seroprevalence as a goal of the IBMP. APHIS and MDOL explicitly stated disagreement with dropping this goal. NPS stated a belief that the discussion was done for today but not overall.

Next steps for 2012 IBMP Annual Report

SB reported that the 2012 IBMP Annual Report is nearly complete, with just a few more comments needed. He thanked the Partners for their timely and diligent work getting the report materials to him. The report is expected to be posted in time for the December 31 deadline, as described in the new Partner Protocols discussed elsewhere in this meeting. **** Action item 2**—SB to send out most recent draft of annual report to Partners for Partner review and return by Dec 14.

Status of signing North Side AM changes

PF reported that all North Side AM changes have been signed.

State MEPA process for addition of new West Side lands open to bison

PF reported that MFWP is working to have a completed environmental assessment ready for public review soon with current expectation being mid-December. When the EA is completed, it will be released for a 30-day public comment period, with a final decision to be reached sometime thereafter.

Partner briefings and updates

AJ—Update on efforts toward developing and implementing a factual education program about bison

AJ provided an update on the efforts of an education team she has been heading with a changing cast of CWG members. Progress to date has been the creation in draft of two factual brochures: one on bison basics and one on staying safe in bison country. A new webpage—<http://ibmp.info/bisoneducation.php>—has been created to eventually provide access to the brochures as well as instructional videos on bison. Currently clearance is being sought for use of the videos that are already available on YouTube. Andrea also noted the need for funding for the brochures to augment that already provided by MFWP; the request went to other Partners or NGOs but received no appreciable feedback or commitment. **** Action item 3**—AJ to send out a request for bison education funding to Partners and NGOs. Finally, she described the potential use of social media such as Facebook as a way to further advance the goal of educating the general public on bison. Andrea's provided her update as slides which can be found at <http://ibmp.info/Library/20121127/20121127.php>.

PF—use of dogs for bison, report on discussion with Keith Aune

PF talked with Keith. Keith reported no knowledge of ongoing work by teams using dogs to detect brucellosis.

Pat—status of relocation of quarantined bison from YNP

No change in the relocation of quarantined bison with nothing currently planned.

Pat—potential of late season damage hunts

Yes, we now have authority for late season damage hunts in Zone 3, as approved by the Fish and Wildlife Commission.

Pat—status of litigation regarding increased tolerance on the North Side.

Closing arguments have been heard. The judge in the case retires January 7, 2013 and vows to have the trial closed before he retires.

Dave—Status of the possible brucellosis science panel

DaveH reported that NPS continues to plan on convening a science panel on brucellosis as reported at the August 2012 IBMP meeting, but is awaiting funding OK. Current hope is that this panel will be convened sometime in the winter of 2013.

Ryan—update on Gonacon trials

Bulls were put in with cows in early August and taken out in early October. Awaiting spring calving to assess results.

Ariel, Matt—current status of the CWG

The group is dormant but actively following the results matrix in the annual report to assure progress on those CWG recommendations accepted by the Partners. They are helping with the education component. The group believes it needs a facilitator if it meets again.

Partner lead changeover 1 Jan 2013 to APHIS—any issues to discuss?

None.

Mary—introducing the idea of potential Partner broad scale planning re: what is the priority work of the IBMP Partners now that Partners have a solid AM plan in place, are acting on many CWG recommendations, etc.

ME noted that the Partners may be at a point of transition where they need to go through an exercise about strategy, visioning, and looking at partnerships. DW said that decisions on issues currently before the court will be big factors in where the IBMP goes, as may the recommendations of the brucellosis science panel that NPS hopes to convene in the winter of 2013. PF noted that the CWG Recommendations are in effect a 5-year plan for the Partners. The Partners decided that they did not, at this time, want to take this suggestion of broad scale planning on as an action item.

SB—updates on IBMP.info

**** Action item 4**—Scott noted that the planned revamp of ibmp.info library will be pushed into 2013 due to funding constraints. The AM section will be updated before the end of January.

2013 Meeting planning

The Partners decided on the following schedule for their meetings in 2013 (note that two dates were set aside for possible field trips, locations unspecified):

- **May 9—Normal IBMP meeting** (8 AM to 5 PM). Location: Bozeman, MT.
- July 31—*Possible* field trip (TBD, hold the date).
- **August 1—Normal IBMP meeting** (8 AM to 5 PM). Location: CSKT Tribal Headquarters, Pablo MT (8 AM to 5 PM).
- November 20—*Possible* field trip (TBD, hold the date).
- **November 21—Normal IBMP meeting** (8 AM to 5 PM). Location: Chico Hot Springs, Pray MT (tentative).

Public comment

The following notes on public comment to the IBMP Partners are not intended to be complete, but rather reflect the facilitator’s best effort to capture key statements. The facilitator has especially attempted to capture those comments from the public that appeared to be solution oriented and have the potential for inclusion in AM planning and/or process improvement. These items, as well as other potentially actionable items, are called out with a “**” in the listings that follow.

Names associated with comments are available from the facilitator. They are not included here, however, in an effort to focus on the comment rather than the speaker. Line breaks in the bullets indicate a new speaker.

- I want MFWP to be the sole manager of bison, with no involvement from MDOL.
- I feel good about this meeting. I have been with the bison issue since back when we started the Big Open concept.
- The key question is “What is our vision?” And the answer is “Buffalo as wildlife managed by MFWP.”
- Look at the maps. There is a lot of open country in eastern Montana, all the way north to Canada. We will buy up all the private land to make room for bison.

- ** The Bison Coexistence Project is underway, run by Greater Yellowstone Coalition, Defenders of Wildlife, Sierra Club, and Natural Resource Defense Council. All are welcome.
- This project was started in 2011 with MFWP in a lead role. The NGOs provided funding for fencing.
- In 2012 the NGOs are taking the lead. The NGOs will help landowners by getting word out about a 50/50 dollar match to help with bison issues.
- In 2011 we had six projects. In 2012 we have had four projects with three more in the works. We are seeking more funding, and more ways to get the word out.

- It is clear from today's presentations that brucellosis is here to stay. Thus we need to learn to live with it.
- ****Increased habitat will lead to decreased opportunities for transmission.**
- We must begin to think of the impacts of ranchers on bison, and not just the other way around. Thanks to McCoy Oatman for addressing this issue, and his wise words in support of bison.
- I did not agree with Dr. Zaluski that we have achieved the goals of the Record of Decision as he read aloud, particularly about not handling animals and allowing them to be wild and free ranging.
- On the CWG we all agreed that we did not want the status quo and now this group stayed there. If we were to stay with the status quo on habitat this group would scream. Why should we not also be able to increase the level of sero-prevalence reduction to get at that side of the equation?
- We cannot frame the question as an all or nothing question. We cannot simply drop seroprevalence from consideration as an IBMP driver. We need to work on many fronts simultaneously to be successful in this effort.
- Yes, there are cost issues with testing for seroprevalence; but there are similar cost issues for increasing habitat.
- Seroprevalence is an important part of the fight to eliminate transmission of brucellosis from bison to cattle.
- The livestock community appreciates the Park for working on decreasing seroprevalence.
- We need to be strategic.
- **** With habitat expansion, we accept that we don't know what will happen as bison are able to travel to new places. We need to have that same openness with issues of seroprevalence.**
- I agree that we need clarification from the ROD about seroprevalence, but we don't need to get caught up in the ROD because things have changed since 2000.
- Remote vaccination has not been proven effective by either NPS or APHIS.
- **** It is ridiculous not to address elk and brucellosis—that must be part of any cost/benefit analysis.**
- I don't agree with the NPS idea to cull animals because of age as this will hurt natural selection, especially if the animals are removed randomly as that's not what nature does. Instead if we are trying to mimic nature we should take the young, the old, the weak, the injured, etc.
- This issue is a matter of fairness to the animal. I know how we are struggling with this issue. I recall seeing an animal working its way out of the Park 4 or 5 years ago, and how sad it was that I knew for all its work and labored breath, its likely fate was to end up in the Stephen's Creek facility.
- Why not fill Paradise Valley with bison like they once talked about doing with water behind the proposed Allenspur Dam?

November 28th

Partner Protocols

The Partners have reviewed and commented on the Partner Protocols through multiple iterations over many months. They came to this agenda item with a goal from the Lead Partner to adopt the Protocols at this meeting.

One point of extended debate centered on the section describing the role of tribal entities overall, including in development of and agreement to each year's Winter Ops Plan. Another point of discussion centered on the role of consensus. To address these concerns, several key changes—proposed by PF and

agreed upon by all Partners—were made in the draft that was currently under consideration. These changes included:

- (1) Making the CSKT, ITBC, and NPT full decision makers (i.e., are “full Partners”) in all IBMP decisions, including those called out to the other five agencies only through the 2000 ROD. To be clear, as stated in the Protocols, this change does not impact those instances where individual agencies are ROD- or court-mandated as the sole decision maker, but rather only those decisions deemed as “IBMP decisions”.
- (2) Keeping the Partners as a group that seeks consensus but *no longer requiring 100% consensus* on all decisions. Instead, decisions and action can proceed even with dissent of a Partner. However, a method for recording dissent from consensus decision was created.
- (3) Creating an obligation that when that dissent is registered (#2), that *dissent must be presented in the form of a solution* via the adaptive management process set forth elsewhere in the Partner Protocols.

There was some concern stated about institutionalizing dissent. Some Partners stated that they don’t always agree 100% with all IBMP decisions but recognize the need to act in concert toward the goals of the IBMP. Other Partners thought that capturing the dissent was positive, and stated that by they were not seeking to foment conflict in pushing to allow those opinions to be captured; instead they wanted the ability to document that they disagreed with an IBMP action, if appropriate. All parties agreed that this was a way to force discussion and to keep an issue alive longer.

A statement was made that if a group was declared a full IBMP Partner then they must accept the tenets and goals of the ROD. None of the three tribal entities stated opposition to this statement.

After considerable discussion, all Partners agreed to adopt the Partner Protocols as final, with the three modifications noted above, and agreed that no signature loop was required. One Partner labeled the new change as “the Partners will act as a consensus group with a safety valve.” The facilitator was instructed to make the three changes and post the Partner Protocols to [ibmp.info](http://ibmp.info/Library/20121127/20121127.php) as final (see <http://ibmp.info/Library/20121127/20121127.php>). The Protocols, by their own definition and process, are modifiable at any future time.

Discussion, signing of Winter 2013 IBMP Operations Plan

The 2013 Winter Operations Plan was available for review by all Partners through the fall. The goal of this meeting was to sign the Winter Operations Plan, if not at this meeting then to set a process to sign the document by December 31, 2012, as per the Partner Protocols. The ramification of not signing the Winter Operations Plan is that winter 2013 operations would then be carried out under the last signed plan from 2009. The 2009 Winter Operations Plan does not include consideration of many adaptive management changes made since then.

Discussion quickly revealed that the Partners were not ready to sign the Winter Operations Plan, based in part on Partner need/desire to further consider input provided by the NPT prior to the meeting. The following bullets capture key points in Partner discussion:

- The Winter Ops Plan includes the management processes described by John Treanor during his November 27 presentation, including selective shipment to slaughter of likely infectious bison.
- KL of the NPT stated some confusion about how to get concepts and changes entered into the Winter Ops Plan.
- Some of the ideas put forth by the NPT may fit better as adaptive management change proposals, than as part of the Winter Ops Plan.
- Partners asked PJ to try to incorporate NPT comments into document as best possible. The idea of planning a conference call was ruled out in lieu of an expectation that the new revisions would likely be acceptable to all Partners.
- ****Action item 5**—PJ to incorporate NPT requests into the Winter Ops Plan and send out to Partners by Dec 7; Partners commit to review and make comments/edits back to PJ by Dec 14. Per a request by DW, Partners agree that no return comment by Dec 14 = agreement to sign the Ops Plan as presented by PJ/NPS on or before Dec 7.

- ****Action item 6**—PJ to update document per input and send final document to SB by Dec 17; SB to post to Partners for electronic signatures per Partner Protocols by Dec 18; Partners to provide signatures by Dec 31.

Next steps for protocols for transfer of YELL bison to American Indian tribes

The Secretary of the Interior has directed NPS to work toward the relocation of certified brucellosis-free bison to DOI and/or Tribal lands.²

NPS received comments from APHIS on the bison transfer process and bison quarantine facilities. Currently the NPS Director in Washington DC is being briefed on the transfer protocols. An agreement has been signed with the ITBC to transfer bison to them.

Introduction of proposed zone concept adaptive management change

RW introduced a proposed adaptive management change through a November 12, 2012 briefing statement to the Partners. The briefing statement, which can be found in full at <http://ibmp.info/Library/20121127/20121127.php>, included the following justification for the proposed change:

- **Proposal**
 - *Remove management zone labels (i.e., Zones 1, 2, and 3) from the adaptive management plan and annual report for the IBMP, and replace this terminology with geographical boundaries where necessary. Recommended alterations to adaptive management plan are attached.*
- **Background**
 - *The management zone concept was included in the final environmental impact statement and records of decision for the IBMP to describe how (1) management actions would differ within Yellowstone National Park and adjacent areas of Montana, and (2) adaptive management procedures would proceed to systematically provide for greater tolerance of bison outside the park over time. Zone 1 encompassed a limited area of the park where intensive management actions like hazing and capture of bison would be implemented to accomplish interagency goals. Zone 2 encompassed an intensive management area outside the park in Montana where bison managers would learn more about implementation of risk management actions to prevent brucellosis infections in cattle. Zone 3 defined areas outside the park where substantial conflicts with livestock were recognized.*
- **Rationale for Adjustment**
 - *The zone management concept is less relevant now than when the IBMP was established in 2000 because the conservation area for bison has been expanded in Montana north and west of Yellowstone National Park and there is an increased emphasis on providing hunting opportunities to tribal and recreational hunters in Montana. Also, managers have more experience at preventing bison commingling with livestock, and there are fewer cattle herds within the bison conservation area than during 2000. Additionally, the Gallatin National Forest has indicated that they will not restrict where bison can occupy National Forest lands, except when necessary to resolve human safety or property damage conflicts.*

Partner discussion about this proposed change moved back and forth across multiple topics:

- **Creating a conservation zone.**—RW noted that the requested change effectively changes Zone 1 and Zone 2 into a single area that might be labeled a “conservation zone”. A Partner noted such a change would be equivalent to saying we would simply have areas of tolerance and of no tolerance. ME supported the idea of having no zone demarcation on public lands and also the idea that the term

² May 11, 2012. See <http://blog.nwf.org/wp-content/blogs.dir/11/files/2012/09/DOI-Sec-Directive-on-the-placement-of-Yellowstone-Bison.pdf>.

“conservation zone” might simplify management and public understanding of geographical demarcations. PF clarified that nothing has changed from the ROD with respect to the geographical designations of Montana and YNP.

- **Potentially causing confusion with ROD mandates.**— Some Partners worried that dropping the zone descriptors might lead to confusion given the disassociation with the verbiage of the ROD. CM asked if the step wise change concept in the ROD, which is based in part on the zone concept, had changed. RW stated that no, a big issue was that the addition of hunting to the management toolbox has muddied the water with respect to where and when bison would be tolerated outside the Park. Also, RW noted that the proposed change would not be reflected in the ROD, but instead reside in the record of adaptive management changes, just as other changes made by the Partners.
- **Why not just add new tolerance areas to Zone 2 lands?**—Partners discussed whether the recent changes on the North Side for increased tolerance were simply equivalent to making Zone 2 there bigger. One Partner suggested that an alternative to the proposed AM change could be to simply say that Zone 2 is bigger.
- **Is the zone concept itself confusing?**—Others countered that the zone descriptors are themselves confusing since currently two cattle herds exist within the new North Side tolerance area. Per the ROD, that would make this area Zone 3 (i.e., no bison tolerated). At a minimum, the North Side tolerance area needs to be labeled Zone 2 to indicate bison are tolerated there. A similar confusion exists at Eagle Creek—it is considered Zone 2 but treated like Zone 1 (i.e., year-round tolerance).
- **Did the North Side MEPA use the zone concept?**—Other Partners asked if MEPA associated with the North Side specifically called out Zone 1 and Zone 2. MDOL responded that no it did not, though they were unsure if that formality was needed. MDOL stated a preference for keeping the current zone delineations, and labeling the new North Side tolerance area as Zone 2.

Given the back and forth discussion regarding expanding Zone 2 boundaries versus going to a single conservation zone designation as in the NPS-proposed AM change, PF volunteered to draft an alternative AM proposal (****action item 7**) for the former. Partners will then be able to debate the merits of the two proposals at the next IBMP meeting. PF noted that he will not be going back through the ROD, but instead focus on previous AM changes on the North Side. No action item was given to NPS pending development of PF’s alternative proposal.

A well deserved thanks

A statement of appreciation was made and round of applause given to Pat Flowers, Sam Shepherd, Andrea Jones, and the rest of the staff at MFWP in thanks to them for acting as IBMP Lead Partner for 2012.

Public comment

The following notes on public comment to the IBMP Partners are not intended to be complete, but rather reflect the facilitator’s best effort to capture key statements. The facilitator has especially attempted to capture those comments from the public that appeared to be solution oriented and have the potential for inclusion in AM planning and/or process improvement. These items, as well as other potentially actionable items, are called out with a “**” in the listings that follow.

Names associated with comments are available from the facilitator. They are not included here, however, in an effort to focus on the comment rather than the speaker. Line breaks in the bullets indicate a new speaker.

- People do get undulant fever.
- I have a trailer park with bison coming through there and I am fearful for my people. The people here don’t seem to care about safety.
- Russia is broke and per the speaker yesterday brucellosis high. Why don’t people think about the health aspects of this issue?

- For this zone deal (speaking of North Side), we need to have our day in court.
- This group has used the word “capture” a lot during this meeting.
- The EIS says “not routinely handled” but in truth under the plan bison are regularly handled. The tribes should push this issue hard.
- Every year bison are chased out of the Park.
- No one ever talks about the endangered status of bison via the IUCN.
- McCoy is here speaking for bison and I thank him for that—speaking for increased habitat, increased numbers, both of which will lead to increased hunting.
- ** Please bring in Peter Gogan be brought in to speak about population structure
- With seroprevalence, vets can argue forever. Seems to me to be just like industrial agriculture versus organic ag.
- I think we should concentrate on a cattle vaccine and reducing contact between elk and cattle rather than spending this time making huge intrusions to bison.
- Appreciate the time provided to Steve Olsen and John Treanor. I think we had good but incomplete discussion.
- **I think that we have some area of common ground regarding the notion of targeting the 2-3 year old bison age group. It may be an imperfect solution, but may be the best we can do for now. It may provide a reasonable proxy for seroprevalence decrease; remote vaccination does not.
- Bison advocates recognize that we won’t end bison capture overnight. Given that, we could vaccinate those bison that are captured.
- If we back off extreme strategies at both ends maybe we can find a place to get together.
- We must continue to build the pressure for Tribal hunt and providing healthy winter range.

*** Meeting adjourned ***

Abbreviations

- AJ—Andrea Jones
- AM—Adaptive management
- APHIS—Animal and Plant Health Inspection Service
- BB—Brooklyn Baptiste
- BFC—Buffalo Field Campaign
- CM—Christian Mackay
- CSKT—Confederated Salish Kootenai Tribes
- CWG—Citizens’ Working Group
- DaveH—David Hallac
- DH—Don Herriot
- DSA—Designated Surveillance Zone
- DW—Dan Wenk
- EA—Environmental Assessment
- EC—Earvin Carlson
- GAO—Government Accountability Office
- GNF—Gallatin National Forest
- GWA—Gallatin Wildlife Association
- GYA—Greater Yellowstone Area
- ITBC— Inter Tribal Buffalo Council
- JH—John Harrison
- JS—Jim Stone
- KL—Keith Lawrence
- LG—Larry Greene
- MBOL—Montana Board of Livestock
- MD—Marna Daley
- MDOL—Montana Department of Livestock
- MDOT—Montana Department of Transportation
- ME—Mary Erickson
- MEPA—Montana Environmental Policy Act
- MFWP—Montana Fish Wildlife and Parks
- MK—Michael Keator
- ML—Mike Lopez
- MO—McCoy Oatman
- MOU—Memorandum of Understanding
- MSGA—Montana Stockgrowers Association
- MSU—Montana State University
- MZ—Marty Zaluski
- NEPA—National Environmental Policy Act
- NGO—Non-governmental organizations
- NP—Nez Perce
- NPS—National Park Service
- NPCA—National Parks Conservation Alliance
- NRDC—Natural Resources Defense Council
- Park—Yellowstone National Park
- PF—Pat Flowers
- PIOs—Public Information Officers
- PJ—PJ White
- RC—Ryan Clarke
- ROD—Record of Decision
- RFP—Request for proposals
- RT—Ron Trahan
- RobT—Rob Tierney
- RTR—Royal Teton Ranch
- RW—Rick Wallen
- SB—Scott Bischke
- SEIS—Supplemental EIS
- SK—Salish Kootenai
- SS— Sam Sheppard
- TM—Tom McDonald
- USFWS—US Fish and Wildlife Service
- USGS—US Geological Survey
- WMA—state of MT wildlife management areas
- YELL—Yellowstone National Park
- YNP—Yellowstone National Park

Appendix A.—Questions from the CWG regarding the importance of seroprevalence as an IBMP driver

- (4) What are the opportunities and constraints for the development and application of a livestock vaccine that would prevent transmission of brucellosis from elk and bison to cattle?
 - a. What is the potential and time table to get *brucella abortus* off the biological agent list of Homeland Security so reasonable and financially feasible research can occur?
 - b. Given the nature of the *brucella abortus* organism, is there a reasonable possibility that a vaccine could be developed that will effectively keep a domestic cow from becoming infected with brucellosis if they are exposed to infected material? If this could be done, what would be the timeframe?
 - c. What entity would you recommend to do this research given that it will be challenging, expensive and time sensitive? There are many institutions that would be interested because of the money involved, but which one has the skills, knowledge, facilities, technology and personnel to accomplish this task?
- (5) Please discuss the logistics of even attempting to eradicate brucellosis in the Greater Yellowstone Ecosystem. Also it is important to recognize that there are other “reservoirs” of the disease in feral swine in the South.
- (6) Please discuss brucellosis immunity. Do we know anything about variation among animals (within species) in their abilities to develop resistance to such bacterial diseases? When we remove seropositive elk or bison, might we be removing exposed, uninfected, resistant animals? Does a calf receive any resistance-benefits from its antibodies in its seropositive mother? And how do the current tests for brucellosis factor into this (e.g., testing for seropositive but immune or non-contagious animals)?
- (7) It seems that as we concentrate elk in time and space, during late gestation, there should be an increased potential for transmitting Brucella among elk. The extreme case is the feedground situations in Wyoming. But what about elsewhere? We are trying to maintain the same numbers of elk, while the amount of elk winter range is decreasing. There is less habitat and elk may not move around as much as they once did. We encourage them to use Wildlife Management Areas. Is there any evidence that this process has caused an increase in Brucella infection rates in elk?
- (8) What is the current status of the quarantine animals? What is occurring with the APHIS birth control study?