The High Divide Collaborative

Where waters part but people come together

High Divide for the Next Generation:

What can we do today to leave a legacy of vibrant communities and healthy lands and resources?

Stakeholder Workshops March 15-16, 2016

University of Montana Western, Dillon, MT

Courtesy Rowan Nyman, fishonphoto.com

The High Divide Collaborative is an effective partnership of landowners, local community leaders, public land managers, state wildlife agencies, scientists, and conservation groups working together to conserve and restore lands of importance for local communities and to protect ecological integrity at the landscape scale. Our region of focus straddles the Continental Divide along the Idaho-Montana state line and is the center of connectivity between the Greater Yellowstone, Crown of the Continent and Central Idaho.

Workshop Goals

1) Start a process for High Divide Stakeholders to express their vision for the desired future condition of the High Divide Landscape, a vision that sustains vibrant local communities, economies and resources. To this end we will:
   - Confirm stakeholder community and conservation goals for the High Divide
   - Share knowledge of current and projected human populations and development
   - Share current information on the status of some of our High Divide priority resources and issues: Water, Communities and Wildfire, Sage Grouse, Wildlife Connectivity
   - Update one another on resource issues and conservation

- Learn stakeholder perspectives of the future for: Water, Communities and Wildfire, Sage Grouse, Wildlife Connectivity

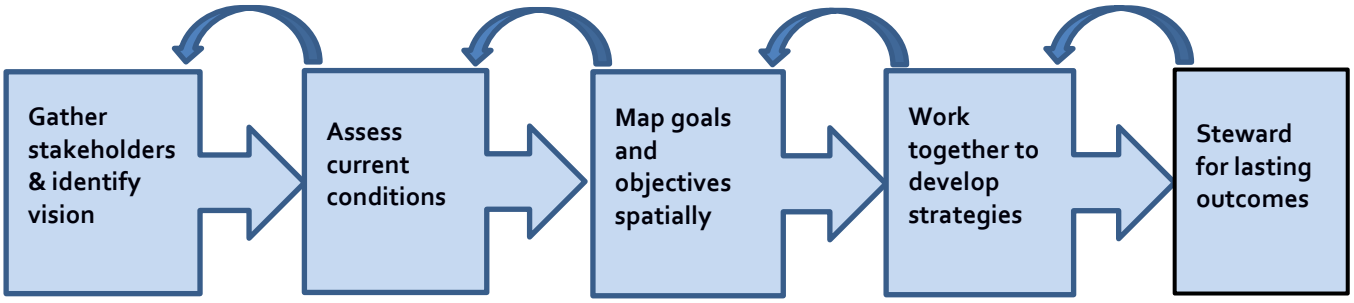
2) Advance the High Divide Collaborative
   - Continue to build trust and credibility within the collaborative and amongst stakeholders
   - Continue to discover added value through collaboration
   - Discuss a more formal governance for the Collaborative

High Divide Collaborative Meeting Summary
March 15-16, Dillon, MT

I. Introduction to High Divide Collaborative and the High Divide Planning Process

Michael Whitfield, Heart of the Rockies Initiative, welcomed participants to the workshops and described why and how we formed the High Divide Collaborative. We began as a collaborative to gain Land and Water Conservation Fund investments in shared goals for the High Divide. Our shared success has encouraged us to work together to seek additional opportunities.
We now wish to engage in a collaborative planning process to guide our work going forward.

Our Planning Process:



II. Confirmation of High Divide Collaborative's Primary Goals

High Divide stakeholders confirmed the 7 primary goals identified in earlier Collaborative meetings, identified some wording changes, and listed potential new goals. Stakeholders then roughly ranked goal priorities. Next Steps: A volunteer team will wordsmith the approved goals for approval by the Collaborative at an upcoming meeting. See the High Divide Collaborative's primary goals as ranked by stakeholders in detailed notes below.

III. Next Steps for High Divide Collaborative Landscape Proposal for Land and Water Conservation Funds

Stakeholders agreed to prepare a Collaborative LWCF proposal for FY2018 using the same geography as mapped in FY2017, and identified several target areas in that geography for FY2018 conservation projects.
Next Steps: Conservation organizations and agency staff are working with landowners to identify opportunities in these priority areas. See detailed notes below.

IV. The High Divide Collaborative, Form and Function

There was a general consensus among meeting participants to form a representative steering committee, although there were a variety of ideas for how to complete the task.
Next Steps: A volunteer team will develop a strategy to form a steering committee. See detailed notes below.

V. High Divide Collaborative Primary Goals—Stakeholder Vision for Landscape Outcomes

In this workshop the participants dug deeper into 3 of our primary goals to begin to articulate their future vision for: Conservation of water quality and quantity and drought resilience; Wildfire and Communities; and Fish and Wildlife Connectivity.

A. Residential build-out in the High Divide—What we know about High Divide communities and development in the High Divide

Patty Gude of Headwaters Economics discussed the results of her build-out analysis with projections to 2023 for 14 High Divide counties. See detailed notes below.
Next Steps: We have a spatial model of the Headwaters Economics data and will update the map to inform stakeholders of potential resource trade-offs in future discussions. At some point we will need to expand this analysis to counties that were not covered (or use model).

B. Wildfire and Communities

Ray Rasker, Headwaters Economics, provided an overview of Wildfire Risk and community costs in the current and future Wildland Urban Interface (WUI). Karin Riley and Jessica Haas of the Rocky Mountain Research Station, US Forest Service, discussed wildfire risk assessment and presented very interesting examples of wildfire threat modeling applied to human infrastructure and natural resources, with consideration for the role of fire in natural systems. Gina Knudson, Salmon Valley Stewardship, Jim Tucker, Salmon-Challis National Forest, and Elizabeth Davy, Caribou-Targhee National Forest, provided examples of how High Divide communities are addressing wildfire threats. High Divide stakeholders then discussed current conditions and began to describe their vision for the future. See detailed notes below.

C. Water Conservation and Drought Resilience

Rob Van Kirk, Henry's Fork Foundation, described the current state of water resources in the High Divide, Idaho and Montana. Ann Schwend, Montana Dept. of Natural Resources and Conservation; Roger Chase, Idaho Water Resources Board; Tom Rice, Beaverhead County Commission and Clark Canyon Water Supply; and Dale Swensen, Fremont Madison Irrigation District, filled in a description of water uses, water resource values, and drought resiliency in the High Divide. See detailed notes below.

D. Sagebrush Ecosystem Conservation

Kyle Tackett, District Conservationist and Montana Sage Grouse Initiative Coordinator, Natural Resources Conservation Service, Dillon, MT; Lara Fondow, Sage Grouse Initiative Conservationist, Natural Resources Conservation Service and Pheasants Forever, Rexburg, ID; and Mary D'Aversa, District Manager, Bureau of Land Management, Idaho Falls, ID, described the current status of sage grouse and their habitats and current conservation activities in the High Divide. See detailed notes below.

E. Wildlife Connectivity

Meeting participants were duly awed by the many map displays of wildlife movement data provided by Idaho Department of Fish and Game; Montana Fish, Wildlife and Parks; and Wildlife Conservation Society.

A panel of presenters, including Steve Schmidt, Region Six Supervisor, Idaho Department of Fish and Game; Jeff Burrell, Northern Rockies Program Coordinator, Wildlife Conservation Society; and Kyle Cutting, Wildlife Biologist, Red Rock Lakes National Wildlife Refuge, discussed our current knowledge of wildlife movements through empirical research about key species.

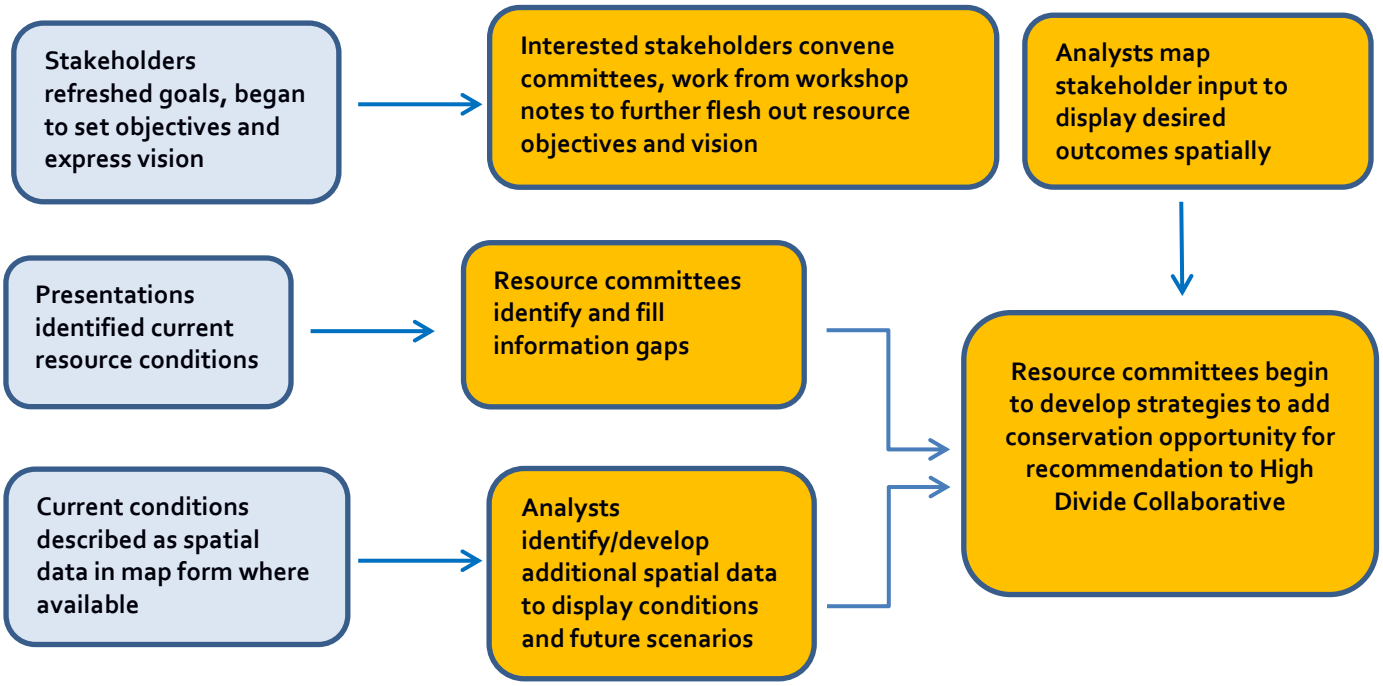
Meredith McClure, Spatial Ecologist, Center for Large Landscape Conservation, shared scientific models of wildlife connectivity and discussed their uses currently and in a changing environment.

Another panel of experts discussed People and Wildlife interactions, tolerance and conflicts. Facilitated by Kris Inman, Community Partnerships Representative, Wildlife Conservation Society; this panel included John Crumley, Rancher, Madison Valley Ranchlands Group, MT; Steve, Schmidt, Idaho Department of Fish and Game; Chance Story, Rancher, Madison Valley, MT; Rebecca Ramsey, Watershed Coordinator, Ruby Valley Conservation District; and Rob Ament, Western Transportation Institute at Montana State University and Center for Large Landscape Conservation.
See detailed notes below.

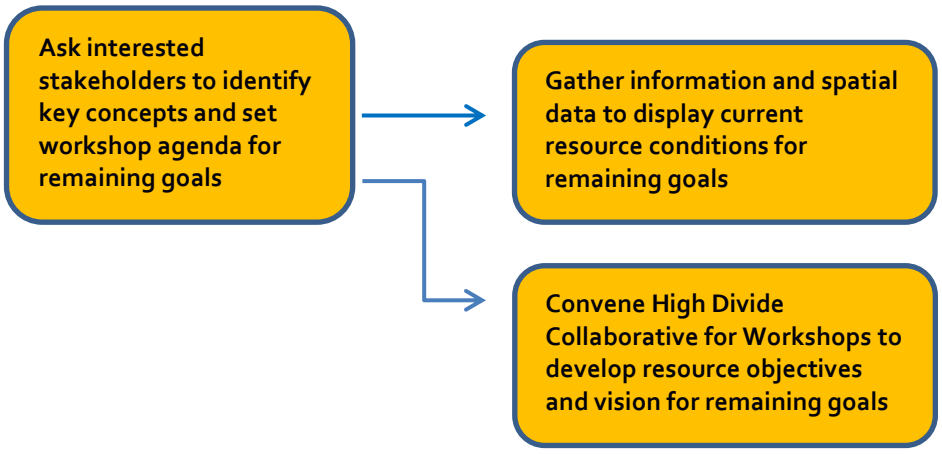
Thanks are due to:
Facilitator: Barb Cestero **Logistics: JoAnn Grant, HOTR**
High Divide Collaborative – 2016 Workshop Planning Committee
Brooke Erb – Rancher – Dillon
Matt Pieron – IDFG Mule Deer Initiative – Idaho Falls
Ann Schwend – DNRC Upper Missouri Basin Water Planner - Helena
Virginia Kelly – Gallatin Custer NF - Bozeman
Karen Rice – retired BLM Liaison – Idaho Falls
Melly Rueling – Center for Large Landscape Conservation – Bozeman
Kris Inman – Wildlife Conservation Society – Ennis
Patty Gude – Headwaters Economics - Bozeman
Yvette Converse – GNLCC Coordinator, USFWS – Bozeman
Michael Whitfield – Heart of the Rockies – Driggs

Schematic—Next Steps for Goals Discussed (Water, Fire, Sage Brush Ecosystems, Fish and Wildlife Connectivity):

Discussion Initiated 03-2016: Follow-up steps:



Schematic—Next Steps for Goals Not Yet Discussed (Ranchlands, Recreation, Cultural Resources, and Forest Ecosystems):



High Divide Collaborative Detailed Meeting Notes March 15-16, 2016

I. Confirmation of the High Divide Collaborative's Goals:

Participants reviewed the 7 high level conservation goals developed by High Divide Collaborative stakeholders in the context of the LWCF funding applications, and identified potentially missing goals or themes. The group then roughly ranked goal priorities. The original 7 goals are listed below followed by the missing goals. Each participant was allowed to "vote" for their 3 top goals; the number in parentheses by each goal reflects the number of points assigned to it by workshop participants.

<u>The High Divide Collaborative's seven primary conservation goals, as stated by Collaborative stakeholders, are to conserve:</u>

- Working ranch lands central to the region's communities, economy and way of life. **(67)**
- Ecological linkage between protected core areas to conserve wide ranging wildlife such as elk, antelope, and wolverine and respond to climate change. **(54)**
- Nationally important dispersed recreation lands and waterways. Get people into nature. **(22)**
- A legacy of Nez Perce, Continental Divide, and Lewis and Clark national trails. **(4)**
- Restored headwaters for sensitive fish species and quality water for human uses. **(38)**
- Crucial core and migratory sage grouse habitats. **(13)**
- Open land in the Wildland Urban Interface (WUI) to protect life and property and reduce community fire-fighting costs. **(24)**

<u>Missing goals – brainstormed list:</u>

The following were identified as potentially missing goals. A volunteer team will later polish the wording. Again the number in parentheses reflects the number of dots participants placed by this goal.

- Sage steppe habitat goal (addition to sage grouse specific goal). **(10)**
- Forestry/forest management goal, including an economic component related to forest products industry/infrastructure. **(13)**
- Species diversity goal **(2)**
- Water quantity (addition to the existing water goal statement). **(13)**
- Cultural connectivity/integrity **(7)**
- Maintenance/ stewardship of the land we have **(9)**
- Natural fire cycle goal **(3)**
- Enhancement/ stewardship of habitat **(7)**
- Getting information/ the story out to the public **(7)**

II. Next steps for Land and Water Conservation Fund (LWCF) funding proposals

Stakeholders agreed to prepare a Collaborative propose for FY2018 using the same geography as mapped in FY2017. The following list identifies potential geographies to include in the FY 2018 proposal.

- Focus on places we are trying to finish (i.e.: Pioneers)
- Clark County, ID
- Vanishing rivers landscape
- Shotgun Valley

- Island Park/ Upper Madison
- Upper Beaverhead/Upper Big Hole
- Upper Ruby
- Upper Pahsimeroi/ Donkey Hills
- Montana's Designated Surveillance Area (for brucellosis surveillance)
- Suggestion to "enhance, not just protect/conserve", ensure stewardship

III. The Collaborative form and function, next steps: Shared Collaborative Governance. Michael Whitfield asked if it is timely to make the High Divide Collaborative more formal by creating a governance structure that better shares decision making, keeps stakeholders engaged, continues to build trust among participants, and adds value to shared goals. Michael presented an initial proposal to form a Steering Committee representative of High Divide Collaborative stakeholders. Participants were then asked to discuss this proposal and provide their sense of the need and purpose for such a step. Participants were organized into 11 groups in table discussions and provided feedback in note form. The results of these discussions are summarized as follows:

Among all 11 tables there was a general consensus to form a representative steering committee, although there were a number of ideas on achievement of this goal. There was also agreement that the Heart of the Rockies Initiative should continue as convener and administrator for the High Divide Collaborative. Discussion notes follow:

<u>Collborative Form</u>:

- Form a steering committee to act as the High Divide Collaborative's core governing body to implement direction provided by the Collaborative stakeholders
- Subcommittees to support Steering Committee and focus on goals; helps to ensure broader participation in Collaborative

<u>How to form Steering Committee</u>:

- Representative of stakeholder sectors
- Geographically diverse, watershed representation
- Elections to identify sector and geography representation
- Small enough to act effectively and large enough to be representative and sustainable
- Term limits to broaden participation over time
- Need committed, consistent participation from individuals who serve on committee
- Decisions based upon consensus

<u>Steering Committee Functions</u>:

- Set the stage for future conservation in the landscape that balances the varying needs of individuals, organizations and agencies;
- To provide a forum to explore conservation, restoration and stewardship opportunities and strategies;
- Integrate actions toward achievement of Collaborative goals; identify and implement the tactics needed to meet Collaborative strategies
- Clear decision making for collaborative actions
- Conduit for stakeholder issues

<u>Collaborative needs engagement with:</u>

- private landowners, ranchers
- young people

- watershed groups
- conservation groups
- public land conservation advocates
- Community leaders, elected officials
- Tribes
- Recreation groups
- Scientists from variety of disciplines
- Industry
- Economists
- Educators
- MT and ID state wildlife agencies
- Full array of federal agencies, including NRCS

Value of collaboration at landscape scale:

- Some resources require landscape perspective, such as wildlife connectivity, invasive species, wildfire, scaled-up stewardship
- Collaborative can articulate a landscape vision to get the landscape on the national radar screen; tell the story of cooperation to achieve goals
- Information sharing, information clearinghouse on science, migrations etc.
- landscape "brand recognition" leads to funding opportunities; could support landscape initiatives such as CFLRP, NDRP
- sets up the landscape for long-term stewardship
- marry local needs to landscape concerns
- add efficiency, reduce duplicative efforts
- participants can communicate landscape needs to local partnerships
- collaborative input to federal agency planning efforts
- help diverse groups coordinate collaboratively
- strengthen relationships among communities
- Ensure connections to adjoining landscapes, Crown of the Continent, Greater Yellowstone Ecosystem

Cautions, concerns:

- clear lines between agency decision making and High Divide Collaborative;
- challenge of building relationships and trust across broad geography
- challenge of scaling up from watershed focused groups
- ensure that funding gets funneled down to watersheds, work on the ground
- more difficult for non-paid individuals like landowners and tribal representatives to participate. May need funding to support participation by some sectors.

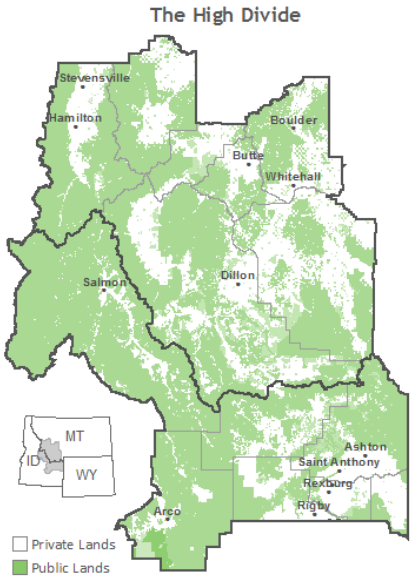
Communities and Human Footprint in the High Divide

Speaker, Patty Gude, Associate Director, Headwaters Economics

Patty Gude. *A build-out analysis for the High Divide of Montana and Idaho.*

- Buildout Study completed for a portion of the High Divide (14 counties)

Forecast of buildout to 2023 based on historical trends



- Data collected on locations where homes were built (location, year built)
    - High Divide is very rural even by Western standards
    - Number of single family homes has tripled in the past 50 years: 28,000 1963; 75,000 2013
        - Big decades for growth: 1980-1990, 1990-2000, big jump in 2000s
        - Top counties for % growth: #1Teton/ID, #2Madison/ID, #3Ravalli/MT
        - 3 counties are losing growth: Butte/ID, Silverbow/MT, Anaconda/MT
        - In the past 10 years 63% of homes were built "out of town"; areas of less than 15 homes per square/mile
    - Homes within Urban/wild land interface (WUI)
        - General increasing trend (300% in 50 years); fastest growth in new WUI homes in Fremont/ID, followed by Jefferson/MT and Ravalli/MT.
    - In the next 10 years, another 150 square miles of currently undeveloped private land is forecast for low-density development.
    - Challenge to retain rural character, landscape is changing quickly. Current land use policies have little bearing on where growth occurs.
    - Question: Who is contributing to this growth?
        - Who related to where, varies by county
- Personal income growth
    - Service jobs provide more income than non-service jobs in High Divide
    - Non-labor- income from investments, retirement, social security (predominant in Lemhi/ID, Granite/MT, Ravalli/MT, Fremont/ID, Jefferson/MT, Beaverhead/MT)
    - Top 5 new industries in the High Divide: Health care, Real estate, Insurance, Arts and entertainment, Retail trade

Drought Resilience and Water Resource Conservation

Facilitators: Ann Schwend, Montana Department of Natural Resources and Conservation, Upper Missouri Basin Water Planner; and Brendan Hoffner, Executive Director, Henry's Fork Foundation, Ashton Idaho.
Speakers: Rob Van Kirk, Senior Scientist, Henry's Fork Foundation; Roger Chase, Chairman, Idaho Water Resources Board; Tom Rice, Beaverhead County Commission and Director, Clark Canyon Water Supply; Dale Swensen, Executive Director, Fremont Madison Irrigation District

Rob Van Kirk. *The Current State of Water Resources in the High Divide, Idaho and Montana*

- Landscape-scale climate and hydrology considerations
    - West-wide precipitation is dependent on elevation
    - High Divide is in a precipitation shadow, relatively arid
        - Water supply primarily from snow melt in this region
        - Decline in precipitation not widespread across High Divide region
    - The way water is re-entering the hydrologic system is dependent on where it's coming from; factors of elevation, steepness, and time determine if water is allowed to enter groundwater

    - Irrigation is the dominant water withdrawal, both upper Missouri and upper Snake
    - Relatively small surface return flow; return mostly groundwater through irrigation
    - Important considerations for water management:
        - Improved water quality
        - Wetland/riparian habitat
        - Ranches and farms
        - Fisheries
        - Flood control
        - Natural storage
        - Groundwater for municipal/domestic use
        - Supply for downstream agricultural users
    - There is a universally downward trend in groundwater availability
        - Largely due to loss of flood irrigated agricultural land
        - Irrigation systems not designed to give small amounts of water to many users as in housing developments
    - Changes in water management create a greater challenge to natural water flow than does climate change
- Recommendations
    - Restore floodplain connectivity
        - Beavers
    - Protect native fish, site-specific needs
    - Maintain working farm and ranch lands
    - Encourage traditional flood-irrigation practices
    - Save water for managed groundwater recharge
    - Retain canal and ditch systems and traditional irrigation practices
        - Limit groundwater withdrawal to culinary use only
    - Coordinate water use applications at watershed-scale

Roger Chase. *The importance of water resources in the Upper Snake, Idaho*

- Pure clean water is one of our greatest assets
- Only recently has Idaho had to worry about lakes and reservoirs dropping below a certain level.
- Restoration of salmon to the Lemhi River is an example of a great water management success
    - Compensate ranchers/people for losses
    - People care about the salmon
    - Nationally recognized for collaborative success
- Water levels have declined in eastern Idaho's Snake River Plain aquifer; aquifer discharge, return to river at Thousand Springs
- Public-Private relations: re-charge systems, once you start you can't stop
- High Divide-headwaters are the first line of defense to protect water quality

Ann Schwend. *Building Drought Resilient Communities in Montana*

- Connecting, science, people, and resources
- National Drought Resilience Partnership (NDRP)
    - President Obama issued action plan to "Enhance Community Preparedness for Drought" in March, 2016
- Led to the Montana NDRP Demonstration Project—Upper Missouri River Basin
    - Locally-led project, reflect needs of local groups
    - Overall Goal to leverage multiple resources: human, technical, financial
    - Engage communities
    - Implement projects
    - Federal, State and NGO Partners

- Challenges
  - Basin legislatively closed to new surface water appropriations
  - Persistent drought
  - Large, mostly rural landscape
  - Changing demographics and land use
  - Data integration and resolution
  - Limited funding to support capacity
- Opportunities
  - Headwaters Basin
  - Good mix of public and private lands
  - Strong core of community based organizations
  - Active regional NGOs engaged in the Basin
  - Multiple agencies and planning efforts
  - Landscape connectivity
- Work plan Goals
  - Provide tools for drought monitoring, assessing and forecasting
  - Develop local and regional capacity to plan for drought
  - Implement local projects to build regional drought resiliency
- 2016 Activities
  - drought monitoring committee
  - communications and outreach plan
  - Montana drought ready communities course
  - Build endowment fund to support local capacity
- Resilient Communities
  - Drought planning classes-webinars
  - Understanding indicators, forecasting
  - Vulnerability assessments
  - Develop response plans and mitigation strategies

Tom Rice. *Water users in the Upper Beaverhead and Clark Canyon Dam*

- 1961 construction of dam began. 175,000 acre/feet of water capacity
  - 15 million dollars original cost for the project
- Joint board
  - Sets irrigation seasonal allotment
  - Winter release
- 4 tier drought management plan
- Reservoir level was at its lowest in 2003
- Only 10 days from a drought on any given year, so be careful with use
- Progressive water report-meet monthly, public postings

Dale Swensen. *Water management in the Henry's Fork Snake River*

- Managed Aquifer Recharge Program to benefit Eastern Snake Plain Aquifer
  - Million dollars recharge canal out of Henry's Fork
  - Extends natural river flow downstream
- Cloud Seeding program to contribute to aquifer recharge
- Projects don't happen without partners

Discussion Questions & Notes: Our stated High Divide conservation goal is: To conserve and restore headwaters for sensitive fish species and to provide water quality and quantity needed for human uses.

1. What does success look like?

- Clean & abundant water for all uses, quantified by watershed
- connected and functioning water courses
- drought resilience plans in communities and watersheds
- connecting data locally to regional plan
- maximizing natural water storage
- infrastructure exists to collect data
- persistence of viable fish populations
- projects that build on themselves
- increasing participation in conversation – increasing diversity of stakeholders and number of people who understand issues
- sharing lessons learned on drought planning
- producers are diversified enough to adapt to available water
- monitor and measure what we have and what we use
- build flexibility into water management so we can respond to availability and change

2. What key outcomes do you want to see on the landscape?
- Infrastructure to measure, monitor and forecast availability is in place
- implementation of groundwater recharge systems
- develop long term sustainable solutions to problems
- viable economic operations (both agriculture and recreation)
- supported and functioning watershed groups
- change beneficial use criteria to capture things like wetlands recharge, etc.
- better understanding of who uses water and how much they use

3. What do you need to achieve this success?
- Dialogue & learning about how to do water "deals"/transfers/ transactions
- once goal for water is clearly defined need to attract funding resources
- accountability for outcomes with flexibility locally to deliver
- help avoid ESA listings for fish
- technology and precision for monitoring – stumping for funds to put this infrastructure in place
- consistent indicators across watersheds to measure status and trends
- Funding - identifying grants available to local groups, formalization of opportunities
- capacity, support, financial assistance for watershed groups to participate
- learning about the Big Hole ecosystem services work

Communities and Wildfire

Facilitator: Michael Whitfield, Heart of the Rockies Initiative
Speakers: Ray Rasker, Executive Director, Headwaters Economics; Karin Riley, Research Ecologist, Rocky Mountain Research Station, US Forest Service; Jessica Haas, Research Ecologist, Rocky Mountain Research Station, US Forest Service; Gina Knudson, Executive Director, Salmon Valley Stewardship; Jim Tucker, Operations Staff Officer, Salmon-Challis National Forest; Elizabeth Davy, Ashton/Island Park District Ranger, Caribou-Targhee National Forest.

Ray Rasker: *An overview of Wildfire Risk and community costs in the current and future Wildland Urban Interface (WUI)*

- Fires are bigger, burn longer and hotter with a longer season. More homes are being built in WUI, more homes are burning (3x what burned 10 years ago), cost is increasing (50-90% of firefighting cost is in defense of homes—was 15%)
- What trends can we reverse? How and where homes are built.
- Creating community planning assistance for wildfire. Examples: Missoula, Bend, Summit County – CO. Each community is different with different needs
- What does detailed fire modeling look like? Where is it safe to build? Computer modeling program by AnchorPoint is being used is some sample cities. It identifies ember zones, where embers are likely to land given certain weather patterns and fire locations. Helps identify scenario planning for communities.
    - Benefits: Prioritizing fuel treatments, education and Fire Wise groups, legitimizing funding requests, identify watersheds at risk, identify where it is low risk to build, location of new emergency stations
- New tool on Headwaters Economics website (headwatereconomics.org) – an interactive map showing history of fires since 2000.

  Question: Is there any work being done with insurance planning? Ray has initiated a study. Would policies/rates influence where people build? Yes, in a handful of places already. However, the insurance industry is not changing in relation to wildfire. Their number one claim issue remains leaking washing machines. Insurance will not fix the wildfire challenge in the wildland urban interface.

Karen Riley and Jessica Haas, *Wildfire Risk Assessment, Modeling and Planning for the High Divide. Examples of wildfire risk assessment, modeling wildfire threats to communities and natural resources and potential benefits from wildfire*

- Historical fire regimes showed low severity/high frequency fires in Ponderosa; some dramatic crown fires in lodgepole. Tribes burned for many reasons and when pioneers came along that burning stopped.
- Modern fire regime – when we get a chance to put a fire out, we do. We are taking more opportunities to let some fires burn. Fuels have changed dramatically on the landscape. Change in climate is creating more extreme wildfire conditions.
    - Recent notable fires included the rapidly moving Polebridge fire in MT. In 1988 the fire moved 8 miles in 10 hours.
- Modeling wildfire risk assessment – likelihood, intensity and susceptibility
    - Why model? To expand predictability from historic information. Can simulate weather patterns, ignitions, and together they simulate spread and containment.
    - Created a brand new model looking at burn probability.
- Allows for integrated risk assessment – Little Belts is an example. We looked at highly valued resources and landscape gains and losses and were able to help prioritize action. Put funding toward high probability / highest negative impact areas.
- How do we reduce the likelihood of fire? Put fire back on the landscape. It is a long-term process. It will reduce the chances for a mega fire. Fuel treatments help.
- Question. Are agencies changing action? Policies are in place, but social drivers are strong.

Gina Knudson, Jim Tucker and Elizabeth Davy *Updates on how High Divide communities are addressing wildfire threats*

Gina and Jim, Salmon

- Lemhi Forest Restoration Group – working together for 10 years.
  - Our region has had recent fires and we have high probability of more fires.
  - Clear creek fire in 2000 got our attention.
  - Lemhi County is only 8% privately owned, and Custer is 3-4%. So if we eliminated all risky development, we would severely reduce building opportunities.
- What are our communities doing in light of that?
  - Background – environmental groups want less cutting, communities want fire protection and agencies are caught in the middle.
  - So we started with the issue of personal safety. Where wouldn't we send firefighters? We found we could be more proactive and move forward in this context.
  - Our first project was on Hughes Creek, 13,000 acre project, designing roads for safe ingress/egress. And there was no litigation. We appreciate the willingness of the Forest Service to point priorities where community priorities are. When we build from community-driven priorities, agency experience is better, more efficient use of taxpayer dollars and we build a social agreement.
- Challenges
  - Some of our drainages are too dangerous to send in firefighters
- What can High Divide Collaborative do to help?
  - We need more fire on the land
  - Our infrastructure is gone. Logging operations are not feasible. If we are doing mechanical treatments we need mills. Hauling costs are astronomical.
- The Hughes Creek project where earlier treatments were done allowed us to send type 1 team to fight the later Mustang Fire

Liz, Island Park

- Island Park has large summer community – 300 residents who are blue-collar second home owners. Many of our subdivisions are too dangerous to enter in a fire situation.
- We modeled to identify high risk subdivisions. Our first action was to create and implement a communications plan, and offer free risk evaluations. It is working well, neighbors are learning from each other.
- Money is a big issue. We do have two projects on the forest now, they are small. Eventually want to do a landscape scale project but we don't have the social capital do it.

Discussion Questions & notes: Our conservation goal is to conserve open land in the Wildland Urban Interface (WUI) to protect life and property and reduce community fire-fighting costs.

1. Why is this High Divide goal important to you?

- Cohesive strategy
- Public & firefighter safety
- save money, cost avoidance, resources diversion
- wildlife habitat protection/ enhancement
- watershed protection
- illegal trails proliferated

2. What is the current status of this goal in the High Divide?
- Cohesive strategy – needs funding
- fire adaptive communities
- reactive is the current status
- private landowners need to do more
- attitudes about fire improving??

3. What does success look like in achieving this goal?
- Cohesive strategy
- Hughes Creek type collaborative projects
- proactive measures on public and private lands
- WUI is risky place to live, ecologically important
- more WUI in conservation planning efforts
- landscape level, all lands approach
- fire playing a natural role (where appropriate)

4. What key outcomes would you want to see on the landscape?
- Using conservation tools (easements) to address WUI
- minimize new WUI development
- Concept of a fire plain (similar to a flood plain)

Sage Grouse and Sagebrush Ecosystem Conservation

Facilitator: Kyle Tackett, District Conservationist and Montana Sage Grouse Initiative Coordinator, Natural Resources Conservation Service, Dillon, MT; Lara Fondow, Sage Grouse Initiative Conservationist, Natural Resources Conservation Service and Pheasants Forever, Rexburg, ID; and Mary D'Aversa, District Manager, Bureau of Land Management, Idaho Falls.

Kyle Tackett. *The Current State of Sage Steppe Habitats and Sage Grouse in the High Divide, Montana priorities.*
- Sage grouse initiative launched in 2010 (NRCS)
  - Chief investment strategy, SGI 2.0 directed $211 million across 11 states
- Montana priorities
  - conservation easements to maintain sagebrush habitat
  - improve rangeland health
  - mesic Area Restoration
    - 80% of wet, green habitat on private land
  - fence collisions
  - conifer encroachment—it only takes 4% conifer canopy cover to compromise a sagebrush habitat for sage grouse—not a big issue in High Divide habitats

Lara Fondow. *The Current State of Sage Steppe Habitats and Sage Grouse in the High Divide, Idaho activities.*
- Local working group conservation plans (Challis, Upper Snake, East Idaho Uplands)
  - identify threats to sage grouse, plans to address threats
- Issues addressed
  - wildfire, historic suppression has led to fuel build up

    - pesticide use
    - agricultural expansion
    - livestock impacts
    - human disturbance
    - invasive/undesirable plant species, cheat grass
- Resilience/resistance assessment regarding climate change, soil moisture, temperature
- Opportunities
    - coordinate with BLM fuels and restoration projects
    - work on public/private partnerships, build trust
    - land protection
- Heavy Brush management
    - 60% of cover in upper snake valley is heavy brush
    - should this be mitigated? Somewhat contentious issue.
    - convert sections to sage grouse habitat?
- Rangeland Fire Protection Association, Landowners get proper training to fight developing fires in sage-grouse habitat

Mary D'Aversa. *Public Land Actions for Sagebrush Ecosystems in the High Divide, Idaho.*

- Landscape area planning--based on 3.6 million acre area, 80% sage grouse habitat
    - process to withdraw mineral entry on extensive lands
    - wildfire- conversion greatest threats
- What steps are being taken?
    - established 3% disturbance cap
    - fire suppression- repositioning assets in great basin- get a jump on fire in great basin
    - external partners workshop- engage stakeholders
    - 162,000 acres of burns and mechanized fuel reduction
- Core habitat
    - 75% of birds occupy 25% of land area
    - focuses funding and efforts to core areas
    - dovetailing sagebrush system conservation to WUI

Fish and Wildlife Connectivity in the High Divide

Panel Discussion: Current knowledge of wildlife movements through empirical research.
Speakers: Steve Schmidt, Region Six Supervisor, Idaho Department of Fish and Game; Jeff Burrell, Northern Rockies Program Coordinator, Wildlife Conservation Society; Kyle Cutting, Wildlife Biologist, Red Rock Lakes National Wildlife Refuge

Steve Schmidt, *What is wildlife connectivity and why does it matter*

Connectivity

- How does wildlife move through a landscape, and what conflicts will they encounter as they move from point a to point b?
- Need to make intentional decisions to preserve wildlife connectivity and species richness upon a landscape
- Mobility is key to survival for many wildlife species

Pheasant example

- Small home range: 2 miles in summer- half mile in winter

- Worked with farmers to establish pheasant habitat in upper snake
- Survival depends on ability to move between shelter and foraging areas
- Even at this small scale, connectivity is very important
- Much easier to identify corridors on a small scale- harder to scale up to large ungulates with extensive ranges

Connectivity principles

- Structural connectivity often not enough: forms bottleneck
- Connectivity zones should provide viable habitat to ease trip from point a to point b
- What abuts the corridor? I.e. urban areas adjacent to corridor creates conflict

"Migration is a chain whose strength is that of its weakest link" – John Terbaugh

Habitat connectivity provides:

- Healthy and abundant wildlife populations
- Secure access to seasonally important habitats
- Gene flow between wildlife populations
- Means to repopulate extirpated populations
- Increased biodiversity

Scientific Data

- Collaring GPS data identify important corridors
- Yellowstone Grizzly bears enter and re-enter the park multiple times in a year: extensive yearly ranges with defined connectivity corridors
- Henrys lake: corridor abuts with private property
    - Raises questions as to whether they can move across the landscape successfully
- How do you accommodate needs of birds that travel great distances?

Elk

- Extensive movement of Elk in and out of Yellowstone NP
- Complexity of wildlife movement in landscape
- Herds hold different migration pathways
- Must maintain connectivity corridors to preserve micro-populations
- Interchanges between states among elk populations
    - Big challenge to preserve connectivity on such a large scale

Mule Deer

- A single deer migrated 120 miles in a single summer- not uncommon

Wolverine

- Move through high country with significant patches of snow through May
- Have larger home range than grizzly bears
- Future depends on gene flow through landscapes
- How do you maintain extensive migration corridors essential to preserving gene flow?

Challenges ahead

- Large home ranges and long migrations
- Unknown or poorly understood corridors and bottlenecks
- Rapidly growing human populations
- Resources to study migrations and locate weak links—the bottlenecks
- Not thinking or planning big enough

Jeff Burell, *Lessons learned from intensive study of antelope migration in the Pioneers/Craters of the Moon.*

- Data collection: GPS collaring- netting with helicopters, collars last 9 months
  - Accumulate extensive data over short time
- Interaction between herds
  - Looking to chart shared ranges of herds within a landscape
  - Multiple 90 mile migration routs
  - Interact intensively through a landscape- complex routes over large ranges
- What do we do with this data?
  - Identify areas to put money on the ground
  - Address how species move across a landscape
  - Identify speed and direction- movement models
- Movement Models
  - Identify speed and directions
  - Shows areas where ungulates are slowing down/being impeded
  - Prioritizes areas for mitigation in region where migrations are impeded
  - Different patterns of movement in fall vs. spring migration- make sure to correctly interpret data to make sound recommendations for mitigation
- Mitigation efforts
  - Movement models identified that Wyoming highway 191 impedes movement
  - Strategic placement of wildlife crossing has alleviated bottleneck
  - But: adjacent areas to wildlife crossings are not protected- pertinent to put adjacent land under easements in critical areas
- Science to inform conservation efforts
  - Through balanced analytical efforts- can turn oftentimes "messy" data into sound means to inform connectivity mitigation efforts
  - Can validate actions- see how they fit into a greater landscape
  - But funding of initial scientific data is imperative to create body of knowledge

Kyle Cutting, *Links between winter and breeding habitat: migratory connectivity in Greater Sage-grouse*

- Sage grouse management typically is focused around leks, breeding areas and buffers, about a 4 mile area. This is where the dollars are spent.
  - But what if their winter range is 50 miles away?
- Winter habitats
  - lack of winter habitats may limit population of sage grouse within spring habitats through chick protein formation
  - How important are winter habitats to chick protein formation
  - Competing hypotheses within time/season of importance for chick formation
- Data collection
  - Isotope analyses
  - Analyze similarities between C^{13} isotopes between chick and hen
  - 50% within winter range- prioritizes winter range to increase chick protein formation
  - Integrate data with species movement (collaring)
  - Shows westward movement of sage grouse from spring to winter ranges within centennial range
  - Movements focused on securing basin big sage brush habitat

- Conclusions: Isotope results reveal importance of late-wintering habitats to egg and chick production

Modeling Connectivity

Meredith McClure- Spatial Ecologist – Center for Large Landscape Conservation

What scientific models tell us about wildlife connectivity

- Models provide a simplified description, especially a mathematical one, of a system or process
  - "All models are wrong but some are useful"
  - Inherently simplified, BUT give valuable information, enabling better decision making
- How we model wildlife connectivity
  - Collaring
  - Non-intrusive- scat- camera traps- stakeholder engagement
  - Then… relate data to landscape and uses (i.e. snow cover, habitat, land use)
  - Combine to form model (expand)
- Model uses: Connecting the dots
  - Borrows from circuit theory- shows flow of species movement
  - Agrees with observation of sage grouse movement
  - Pronghorn- associated with grassland- avoid humanly modified areas
  - Pronghorn model built around these assumption- then identified areas where pronghorn will likely traverse- fills in gaps within previous data
- Getting perspective
  - Models based on "naturalness"
  - Represent connectivity between ecologically intact areas
  - Does not map individual migration routes- but- offers general areas where species will move with changing climate, and pressures
- Planning for the Future
  - Modeling future development helps identify effects on elk populations whom avoid developed areas
  - Climate models project future emissions scenario with high uncertainty
  - Any scenario for human action in response to climate change will have inherent uncertainty
  - This applies to spatial modeling- need to address future uncertainties
- Models in context
  - All models are wrong- but need to assess how wrong they are
  - Models *can* capture species movement- when compared with radio collar data
  - An effective species movement model will have high degree of co-occurrence
- Connectivity Data atlas compiled for Great Northern Landscape Conservation Cooperative
  - Models available on Databasin—wide range of connectivity models

Stakeholder Values for Connectivity

What does connectivity mean to you?

- Connections among core wildlife habitats in the right spatial scales
  - ability of landscape to meet wildlife needs
  - wildlife are successfully moving through the landscape

    - dispersal and species specific requirements
    - freedom of movement, permeability
    - secure network of connected habitat
    - allowing for gene flow among populations
    - connectivity not always desirable for fish, wildlife and people; some things we don't want to connect, invasives
- Ecological processes connected and consistent across habitats
    - healthy functional ecosystems
    - the definition of wholeness
    - connectivity creates resiliency
    - recognizing the scales within connectivity and how they function
    - plant and animal communities move more slowly than individual species
- Human influence: past, present, future; big effects
    - connecting people to wildlife, outreach and education
    - private land concerns
    - maintenance of open space
    - when the cultural fabric goes we lose the open space, the connections to the land
    - wildlife connectivity necessarily links together ranchers, public land managers, communities, others—we all want the wildlife, must work together to maintain connections
- Wildlife need seasonal ranges for survival
    - most animals in the Centennial leave in the winter
    - transitional habitat, seasonal functionality by species across landscape
    - linkage between breeding/non breeding habitats
    - food, water and cover in movement areas
    - grasslands/lowlands needed to connect the mountains
- Need for a change in landscape conservation perspective
    - need protection between the protected core areas
    - think about protection of smaller core areas
    - even big National Parks need connection among one another
    - hard to convince the public that existing National Parks are not enough protection
    - highlights need for partners and stakeholders to create collaborative action

What concerns do you have about managing for connectivity?

- Barriers to connectivity
    - population trends
    - changes in land use, development
    - traffic
    - recreation pressure
- Climate change and weather extremes
    - changing climate may make today's strategies ineffective
    - need for resilience
- Impacts to other resource uses
    - public land recreation
    - economic benefits/challenges
- Lack of community interest and engagement
    - non-resident landowners may not value wildlife connectivity

    - need more involvement of hunters, landowners
    - transient nature of wildlife movement lessens sense of urgency
    - many different sectors to engage
- Human conflicts
    - people who are impacted by wildlife conflicts need to be at table from the beginning
    - conflict resolution may be more possible than coexistence
    - connecting to places where people don't want wildlife a social challenge, can cause breakdown of collaborative action
    - human/wildlife conflicts increasing
    - don't need to protect everything
    - grizzlies might come to central Idaho
    - fear of public lands takeover, loss of agricultural lands
    - can become a political issue
    - different approach needed to discuss connectivity on private lands
- Lack of information, science
    - Lack of data and models to act reliably
    - information overload, hard to obtain, hard to use
    - science is hard for the lay person to understand
    - understanding where the "weakest links" are and how to address them
    - loss of connectivity bottlenecks, vulnerable areas
    - need to manage for all species = all connectivity
    - need to consider migration staging areas, nutrition considerations
- Negative effects of connectivity actions
    - conduit for invasive species, wildlife disease, or undesirable predators
    - predators changing way wildlife function
    - big picture management actions may obscure more locally specific conservation needs or concerns
- Conservation tools may be limited
    - land management framework may not persist (lowered funding, change in ownership pattern)
    - programs may target only larger pieces of property
    - need connectivity that enhances ecological integrity
    - patchwork land ownership presents challenges to management/ project development
    - changes in land management practices can have unexpected ecological consequences (for example irrigation practices) that lead to loss of key habitats
    - lack of outreach to important stakeholders
    - lack of funds to carry out projects

What challenges to you see in maintaining connectivity?

- Compatibility with human uses
    - coordination with human infrastructure management, such as road development
    - public safety
    - mitigation of road projects at the plan development level
    - rapid pace of residential development, especially in rural areas
    - energy development

    - land management change
    - population growth
    - high elk numbers on private land can be costly
    - demographic shifts – increase in recreation activity
    - limited window to act
- Climate change, temporal sustainability
- Awareness of connectivity needs, issues, solutions
    - education of public
    - societal values – completely disconnected from the land
    - land managers understanding of land use impacts & operations, leadership turnover
    - landowner awareness
    - communication with people, communities from the beginning
    - availability/application of management tools – hunting, trapping
- Information challenges, barriers to action
    - a lot of species – can only monitor a few in a few geographies
    - trust (ranchers), sharing information
    - remembering the time scale of change
    - federal processes are too slow to make meaningful change in time
    - presence of endangered species can create extra scrutiny, hassle for landowner
    - different perspectives can be in conflict
    - misdirected targets or objectives
    - hard to respond at the right scale, scale is huge/ challenging
    - not enough focus on aquatic connectivity even though water is ultimate connector
    - managing riparian areas for multiple uses
    - cross boundary needs, multiple jurisdictions
    - recognition that function is important too
    - identification of the weakest links
    - agency ability to make on-the-ground improvements

- funding
    - fickle nature of funding, sustainability of funds and commitment
    - private sources of funding are hard to find
    - limited window to act

What opportunities or needs to you see that the High Divide Collaborative could help with?

- Partnership and information clearinghouse
    - Gather and share data sets – conduit for information sharing
        - bring experts to help partners learn about resources
        - useful to land managers
    - technical resources
    - incentive database
    - acronym directory
    - connecting individuals with directory including areas of interest/ specialty etc.
    - safe place for people to come talk about their issues
    - forum for decision making, dispersing funds obtained
    - transparency – being clear with what this is all about

    - maps: wildlife movements, migration, threats, critical areas to maintain connectivity
    - share ethics and philosophy
- Develop collaborative strategies for projects
    - learning what is important to stakeholders
    - Prioritizing actions
    - public lands planning, opportunity to include data in land use plans now underway
    - capacity to address more regional issues
    - ensure longevity, durability of connectivity conservation actions
    - develop mitigation strategies to deal with conflicts
- Collaborative fundraising
    - LWCF example of common goals, bring more resources to the table
    - highlight grant opportunities
    - assist communities
    - funding support for research
    - help partners justify funding needs with data/ information to present to donors
    - create and identify incentives for wildlife passage improvements
- Outreach
    - share success stories – get local involvement
    - recognize the role that ranch families play to maintain connectivity, value of working lands
    - HDC could shape & present the story to develop curiosity rather than suspicion or dis-interest
    - communicate value of High Divide region
    - communicate value of community-based conservation model
    - dispel fears of a land grab
    - consider community needs, assist communities
    - provide opportunities to get out on landscape (summer tour as part of annual meeting)
    - case studies shared
    - identify and link public and private needs as appropriate
    - recognize that we are part of a bigger picture
    - planning & zoning data integration
    - community presentations, living with wildlife brochure

People and Wildlife, Conflicts and Tolerance: Panel Discussion
Panel members: Steve Schmidt- Wildlife Biologist, Idaho Department of Fish and Game; John Crumley- Rancher, Madison Valley Ranchlands Group; Chance Story- Rancher; Rebecca Ramsey- Ruby Valley Conservation District, Rob Ament, Center for Large Landscape Conservation, WTI

John Crumley—*Sometimes I am not managing a ranch, I am managing a zoo*

- Wintering elk numbers unusually high in Madison Valley, currently over 3000 elk over planned number; start another hunt of elk within valley
    - Large elk herds tear down fences and over graze-estimated annual damage cost of $180,000

- Landowners are hesitant to accept money- because elk winter range habitat is problematic

Steve Schmidt— *Management of wildlife to remain in biological and social carrying capacity*

- Big game can seriously damage private property
  - We hear from two extremes: some say that there never can be too many elk, bear, wolves; others note that every time a cow is killed, the rancher loses $700-$1,200
  - Ranchers have to absorb costs of elk damages to fences
  - A big question is who should pay for these costs? Need to find the right balance of grizzly, wolves, bear- but a large priority should be how to pay for damaged ranchlands

Rob Ament—*Wildlife and highway barriers*

- Roads impact lands in many ways
  - Cover 1% of land and effect 20% of land cover
  - Cause conversion, and fragmentation
  - Limit connectivity
  - Wildlife collisions are a big problem
  - Light, noise and fumes prevent animal crossings
  - Some animals like reptiles warm on roads- get killed
- How are we reducing conflicts
  - Departments of Transportation and Fish and Game are working more closely
  - Citizens are becoming more involved- are weighing in on transportation plans
  - US highway 20 example- monthly meeting to look at US 20 in high divide and prioritize mitigation projects

Chance Story- *Wildlife friendly fencing, learning from experience (at a young age)*

- Wildlife friendly fencing
  - Experiment with different styles of fencing
  - Fix fenced through pvc pipe over wire- or raising wire
  - Fences that cause problems are too high for elk to jump- and too low for pronghorn to cross
  - Not all fences need to be adjusted- some may just need mitigation in certain spots
  - Installing more wildlife friendly fencing saves money and time by reducing fence damage

People and Wildlife Discussion

- What are good ways to talk about connectivity with stakeholder- rancher and landowner
  - Ranchers are used to making decisions independently
  - Is a shift to have outside influences shape decisions
  - When prices are down- won't have buyers- and sometimes buyers will shy away from cattle that abut brucellosis infected elk
- Need to keep elk upon public land- requires better management (Dean)
- Southwest Montana- ranchers rely upon public lands for grazing- need to secure long-term grazing allotments within public lands

Connectivity Tools and Actions Matrix

Sam Williams- Center for Large Landscape Conservation

Connectivity tools and actions matrix

- Collect and share information about players on the landscape, resources, and actions
- Spatially explicit- contain maps to contextualize projects in greater landscape
- Will be a searchable, filterable search function

Uses and Goals of Matrix

- Who is doing what where and how?
- Connect practitioners and stakeholders

Requests

- Spatial query (possible laso feature)
- Request to have a limited release through High Divide Collaborative

Telling the High Divide Conservation Story

High Divide video project.

Next Steps. The Heart of the Rockies Initiative will be working with a volunteer team to develop the script and speakers. Jamie, Steve, JoAnn and other recruits

Next steps

1. Wordsmithing the goals as confirmed and added to during this workshop. Anne, Lara and other recruits
2. Further develop steering committee. Cornie, Brandon, Kim and other recruits
3. Next steps for this workshop's four goals. This includes determining what work remains to be done in the landscape planning process for the four goals discussed at this workshop and how to do that work. Melly, Kim, Jim and other recruits
4. Cuing up how to tackle the other HDC conservation goals. Includes determining what the planning process, workshops etc. might look like for these goals. Darcie, Sally and other recruits
5. Identifying missing stakeholders and how to reach them. Mark and other recruits