2012 EAST SARPY FIRE

BURNED AREA
EMERGENCY RESPONSE PLAN

CROW INDIAN RESERVATION
BUREAU OF INDIAN AFFAIRS

CROW AGENCY, MONTANA
AUGUST 2012

Bureau of Indian Affairs
BAER TEAM

BURNED AREA EMERGENCY RESPONSE PLAN

2012 EAST SARPY FIRE

AGENCY/UNIT: **Bureau of Indian Affairs**
Crow Tribe

LOCATION: **Crow Agency, Montana**

DATE: **August 18, 2012**

PREPARED BY: **BIA Burned Area Emergency Response Team (Martinez)**

Submitted By: _____
Darryl Martinez, BAER Team Leader, BIA – NIFC, Albuquerque, NM

BURNED AREA EMERGENCY RESPONSE PLAN

2012 EAST SARPY FIRE

REVIEW AND APPROVAL -- BUREAU OF INDIAN AFFAIRS

I. EMERGENCY STABLIZATION PLAN APPROVAL

☐ **Approve**

☐ **Approve with Revision**

☐ **Disapproved**

Explanation for Revision or Disapproval:

Vianna Stewart, Superintendent, Crow Agency, BIA **Date**

I. EMERGENCY STABLIZATION PLAN CONCURRANCE

☐ **Concur**

☐ **Concur with Revision**

☐ **Disapproved**

Explanation for Revision or Disapproval:

Edward Parisian, Regional Director, Rocky Mountain Region, BIA **Date**

II. EMERGENCY STABILIZATION PLAN CONCURRANCE

☐ **Concur**

☐ **Concur with Revision**

☐ **Disapproved**

Explanation for Revision or Disapproval:

Lyle Carlile, Director, Branch of Wildland Fire Management, BIA **Date**

BURNED AREA EMERGENCY RESPONSE PLAN

2012 EAST SARPY FIRE

REVIEW AND APPROVAL -- BUREAU OF INDIAN AFFAIRS

I. BURNED AREA REHABILITATION PLAN APPROVAL

- ☐ **Approve**
- ☐ **Approve with Revision**
- ☐ **Disapproved**

Explanation for Revision or Disapproval:

Vianna Stewart, Superintendent, Crow Agency, BIA **Date**

I. BURNED AREA REHABILITATION PLAN CONCURRANCE

- ☐ **Concur**
- ☐ **Concur with Revision**
- ☐ **Disapproved**

Explanation for Revision or Disapproval:

Edward Parisian, Regional Director, Rocky Mountain Region, BIA **Date**

II. BURNED AREA REHABILITATION PLAN CONCURRANCE

- ☐ **Concur**
- ☐ **Concur with Revision**
- ☐ **Disapproved**

Explanation for Revision or Disapproval:

Lyle Carlile, Director Branch of Wildland Fire Management, BIA **Date**

BURNED AREA EMERGENCY RESPONSE PLAN

2012 EAST SARPY FIRE

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BURNED AREA EMERGENCY RESPONSE PLAN

2012 EAST SARPY FIRE

PART A FIRE LOCATION AND BACKGROUND INFORMATION

Fire Name	EAST SARPY	**Date Controlled**	UNKNOWN
Fire Number	MT-CRA-000101	**Jurisdiction**	**Acres**
Agency Unit	Crow	**BIA**	51,594
Region	Rocky Mountains		
State	Montana		
County	Bighorn		
Ignition Date/Manner	July 31,2012 /Lightning		
Zone			
Date Contained	August 09, 2012	**TOTAL ACRES**	**51,594**

PART B NATURE OF PLAN

I. Type of Plan (check one box below)

	Short-term Emergency Stabilization Plan
	Long-term Rehabilitation
√	**Both Long and Short-term Rehabilitation**

II. Type of Action (Check One box below)

√	**Initial Submission**
	Updating Or Revising The Initial Submission
	Supplying Information For Accomplishment To Date On Work Underway
	Different Phase Of Project Plan
	Final Report (To Comply With The Closure Of The EFR Account)

EMERGENCY STABILIZATION OBJECTIVES

- **Determine Need for and to Prescribe and Implement Emergency Treatments**
- **Minimize Threats to Human Life, Safety, and Property**
- **Identify Threats to Critical Cultural & Natural Resources**
- **Promptly Stabilize and Prevent Unacceptable Degradation to Resources**

PART C TEAM ORGANIZATION

BAER TEAM MEMBERS

POSITION	TEAM MEMBER / AFFILIATION
Team Leader	Darryl Martinez, BIA
Forestry / Vegetation	Eric Rhodenbaugh, BIA Bruce Card, AD, BIA
Hydrologist	Becky Biglow, USFS
Cultural Resources	Dan Hall, BIA Justin Moschelle, BIA
GIS	Luther Arizana, BIA Kevin Nelstead, BIA
Documentation	Wayne Waquiu, BIA Juliette Nabahe, BIA
Environmental Protection Specialist	Juliette Nabahe, BIA
Wildlife Biologist	Daniel Rasmussen, BIA

RESOURCE ADVISORS: Resource Advisors are individuals who assisted the BAER Team with the preparation of this plan. See the CONSULTATIONS section of this plan for a full list of agencies and individuals who were consulted or otherwise contributed to the development of this plan.

Name	Affiliation	Specialty
Vianna Stewart	Bureau of Indian Affairs	Superintendent
Debbie Scott	Bureau of Indian Affairs	Deputy Superintendent
C. Keen Bends	Bureau of Indian Affairs	Administrative Manager
Jarvis Gust	Bureau of Indian Affairs	Regional Wildlife Specialist
Anne Vanderhey	US Fish and Wildlife Service	Biologist
Katrina Dixon	US Fish and Wildlife Service	Biologist
Jeff Berglund	US Fish and Wildlife Service	Biologist
Randy Matchett	US Fish and Wildlife Service	Biologist

Name	Affiliation	Specialty
Hubert Two Leggins	Crow Tribe	Tribal Historic Preservation Office
Bruce Dawes	Crow Tribe	Tribal Historic Preservation Office
Stan Pretty On Top	Crow Tribe	Cultural Committee
Kallie J. Hugs	Bureau of Indian Affairs	Soil Conservationist
Bryce Rogers	Bureau of Indian Affairs	Fire Management Officer
Wilford BirdinGround	Bureau of Indian Affairs	Land Services
Caleb Cain	Bureau of Indian Affairs	Regional Forester

CONSULTATIONS

*** SEE INDIVIDUAL RESOURCE ASSESSMENTS APPENDIX I , SECTION V, CONSULTATIONS

PART D TREATMENT COSTS BY AGENCY AND FIRE

EAST SARPY FIRE

AGENCY	TREATMENT			TOTAL
BIA	**EMERGENCY STABILIZATION (ES)**			
1	Plan Preparation			$32,856
2	Implementation Leader			$12,000
3	Invasive Species Monitoring			$18,910
4	Invasive Species Treatment			$4,693
BIA TOTAL				**$68,459**
BIA	**BURNED AREA REHAB (BAR)**			
1	Reforestation			$67,158
BIA TOTAL				**$67,158**

BURNED AREA EMERGENCY RESPONSE PLAN

2012 EAST SARPY FIRE

PART E SUMMARY OF ACTIVITIES

EMERGENCY STABILIZATION (ES) SPECIFICATION
COST SUMMARY TABLE – BUREAU OF INDIAN AFFAIRS

TREATMENT SPECIFICATION	NFPORS CAT.	UNIT	UNIT COST	# OF UNITS	Fiscal Year				SPECIFICATION TOTAL
					2012	2013	2014		
Crow Agency									
1. Plan Preparation	Planning – ES/BAER Plan	Plan	$32,856	1	$32,856				$32,856
2. Implementation Leader	Administration	10 days	3,000	4	$3,000	$6,000	$3,000		$12,000
3. Invasive Species Monitoring	Monitoring	Acre	$2.71	2,322	$6,303	$6,303	$6,303		$18,910
4. Invasive Species Treatment	Invasive Species	Acre	$60.16	78		$4,693			$4,693
TOTAL									**$68,459**

BURNED AREA EMERGENCY RESPONSE PLAN

2012 EAST SARPY FIRE

BURNED AREA REHABILITATION (BAR) SPECIFICATION
COST SUMMARY TABLE – BUREAU OF INDIAN AFFAIRS

TREATMENT SPECIFICATION	NFPORS CAT.	UNIT	UNIT COST	# OF UNITS	Fiscal Year			SPECIFICATION TOTAL
					2012	2013	2014	
Crow Agency								
1. Reforestation	Reforestation	Acres	$373.10	90		$33,579	$33,579	$67,158
TOTAL								**$67,158**

BURNED AREA EMERGENCY RESPONSE PLAN

2012 EAST SARPY FIRE

PART F EMERGENCY AND B.A.R. SPECIFICATIONS

PART F - INDIVIDUAL SPECIFICATION

TREATMENT/ACTIVITY NAME	BIA Emergency Stabilization and Burned Area Rehabilitation (BAR) Plan Preparation	**Part E, BIA SPEC #**	ES-1
NFPORS TREATMENT CATEGORY*	Planning – ES/BAR BAER Plan	**FISCAL YEAR(S) (list each year):**	FY 2012
NFPORS TREATMENT TYPE *	Planning – Plan Preparation	**WUI? Y / N**	N/A
IMPACTED COMMUNITIES AT RISK	Crow Agency, MT	**IMPACTED T&E SPECIES**	N/A

* See NFPORS Restoration & Rehabilitation module - Edit Treatment screen for applicable entries.

WORK TO BE DONE (describe or attach exact specifications of work to be done):

Number and Describe Each Task:

A. General Description:
Preparation of the Emergency Stabilization and BAR Plan for lands impacted by the East Sarpy Fire.

B. Location/(Suitable) Sites:
Bureau of Indian Affairs, Crow Agency lands impacted by the East Sarpy Fire consisting of 51,594 acres.

C. Design/Construction Specifications:
1. Conduct a detailed assessment of post fire threats to life, property and critical cultural and natural resources and mitigate impacts to the extent possible.
2. Write Emergency Stabilization and Burned Area Rehabilitation treatment specifications based on ground reconnaissance, and consultations with local specialists. Treatments must meet objectives of approved land management plans.
3. Write resource assessments justifying treatments, identifying issues, observations, findings, and recommendations.
4. Prepare GIS maps for ESR planning, implementation and presentation.
5. Produce multiple hard copies of the plan for distribution, as well as digital copies.
6. Submit plan and documentation to the Agency Superintendent and Tribal President.

D. Purpose of Treatment Specifications:
The purpose is to prepare a comprehensive ES and BAR plan to manage or mitigate the fire impacts in order to protect life and property and protect cultural and natural resources. Emergency stabilization actions will be based on a plan developed immediately post-fire.

E. Treatment Effectiveness Monitoring Proposed:
The plan details monitoring for treatment effectiveness as prescribed in each treatment specification. Accomplishment reports will be prepared to document the treatment monitoring.

LABOR, MATERIALS AND OTHER COSTS:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
Administration	$8,213
Cultural	$2,643
Watershed:	$3,452
GIS:	$6,975
Vegetation:	$2,781
TOTAL PERSONNEL SERVICE COST	**$24,064**

EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	**COST / ITEM**
Conference room rental	$800
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	**$800**

MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	**COST / ITEM**
External Flash Drives; Office Supplies	$352
TOTAL MATERIALS AND SUPPLY COST	**$352**

TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	**COST / ITEM**
Lodging and Per Diem:	$4,059
Rental Vehicle Costs	$2,039
Airline: Roundtrip flights (variable)	$867
TOTAL TRAVEL COST	**$6,965**

CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	**COST / ITEM**
GPO Plan Printing (15 plans)	$675
TOTAL CONTRACT COST	**$675**

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH MENTS	PLANNED COST
FY12	8-08-2012	8-19-2012	F, C	Plan			**$32,856**
						TOTAL	

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	P
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	E, M, T
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report..

See Plan Preparation Cost Accounting Table in Supporting Documents

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	Implementation Leader	**PART E BIA Spec #**	ES_2
NFPORS TREATMENT CATEGORY*	Administration	**FISCAL YEAR(S) (list each year):**	2012, 2013, 2014
NFPORS TREATMENT TYPE *	Contract Administration	**WUI? Y / N**	N/A
IMPACTED COMMUNITIES AT RISK	Crow Agency, MT	**IMPACTED T&E SPECIES**	N/A

* See NFPORS Restoration & Rehabilitation module - Edit Treatment screen for applicable entries.

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description: The Implementation Leader will coordinate and direct all aspects of the Emergency Stabilization plan.

B. Location/(Suitable) Sites: Bureau of Indian Affairs, Crow Indian Reservation lands impacted by the East Sarpy and Chalky Fires.

C. Design/Construction Specifications:

1. Appoint, hire or contract a qualified Implementation Leader. Qualifications include adequate training and/or experience in engineering, forestry, or other natural resource related fields pertinent to the emergency stabilization work to be performed.
2. In accordance with ethical guidelines set forth in federal regulations, the Implementation Leader shall have no vested interest or relationship, perceived or actual, in any hiring, contracting or procurement associated with emergency stabilization work to be performed.
3. The Implementation Leader will coordinate and direct the completion of all activities specified in the Emergency Stabilization plan, including implementation of treatment specifications and activities, preparation of commercial and self determination contract packages, documentation of treatments installed, tracking of allocated funds and expenditures, preparation of annual and final accomplishment reports, development of supplemental requests for funding, ensuring the completion of all approved treatments, and coordination with the Crow Agency, Tribe, and other involved parties. A more detailed description of Implementation Leader responsibilities is included in the attached Implementation Leader Scope of Work.

D. Purpose of Treatment Specifications (relate to damage/change caused by fire): The Implementation Leader is necessary to ensure the work specified in the Emergency Stabilization plan is completed in a timely and professional manner, and adequate accountability of treatment effectiveness and funding expenditures is maintained and documented. Administrative support is necessary to provide procurement, contracting, and record keeping, and other administrative support to the Implementation Leader.

E. Treatment consistent with Agency Land Management Plan (identify which plan): Not applicable

F. Treatment Effectiveness Monitoring Proposed: The Crow Tribe and/or Regional BAER Coordinator will monitor Implementation Leader performance to ensure specified projects are successfully completed on time and within budget, including any projects incorporated by approved plan amendments.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
FY12 Implementation Team Leader (GS-9 equiv. @ $300/day x 10 days)	$3,000
FY13 Implementation Team Leader (GS-9 equiv. @ $300/day x 20 days)	$6,000
FY14 Implementation Team Leader (GS-9 equiv. @ $300/day x 10 days)	$3,000
TOTAL PERSONNEL SERVICE COST	**$12,000**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	

MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
Contractor will provide all labor material, supplies, equipment, transportation, and supervision to perform project implementation in accordance with the Project Implementation Leader scope of work.	
TOTAL CONTRACT COST	

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY 12	8/15/12	9/30/12	S	10 days	$3,000	1	$3,000
FY 13	10/1/12	9/30/13	S	10 days	$6,000	1	$6,000
FY 14	10/1/13	9/30/14	S	10 days	$3,000	1	$3,000
						TOTAL	**$12,000**

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	
3.	Estimate supported by cost guides from independent sources or other federal agencies	E
4.	Estimates based upon government wage rates and material cost.	P
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

See Implementation Leader Scope of Work (Attached).

The Implementation Leader is responsible for ensuring the work specified in the Burned Area Emergency Response Plan is completed in a timely and professional manner, and tracking and documenting treatment effectiveness and funding expenditures. Qualifications include adequate training and/or experience in engineering, forestry, or other natural resource related fields pertinent to the emergency stabilization work to be performed. In accordance with ethical guidelines set forth in federal regulations, the Implementation Leader shall have no vested interest or relationship, perceived or actual, in any hiring, contracting or procurement associated with emergency stabilization work to be performed.

The Implementation Leader will coordinate all aspects of emergency stabilization and rehabilitation work approved in the East Sarpy Fire Burned Area Emergency Response Plan including the implementation of treatment specifications and activities, preparation of commercial contract packages, documentation of treatments installed, maintaining financial tracking of costs, reporting rehabilitation progress, submitting supplemental requests for funding, ensuring the completion of all approved treatments, and coordinating with the Crow Agency, Crow Tribe, and other impacted parties.

The Implementation Leader will coordinate on-the-ground implementation of treatments including site orientation of contractors, developing daily/weekly work plans for contractors/crews, and assistance to the Agency in supervising work.

The Implementation Leader will monitor the work to ensure compliance with all relevant Federal laws and regulations. Such laws and regulations include but are not limited to NEPA, NHPA, and all OSHA regulations and safety standards.

The Implementation Leader will provide annual accomplishment reports due Sept 15th detailing percent accomplishment for each project specification, dates of completion, funds expended, quality control inspection reports, and treatment effectiveness monitoring reports.

At completion of the three-year funding period the Implementation Leader will prepare a final accomplishment report. The final report will summarize all data requested in the annual reports and provide a comprehensive and objective compendium of lessons learned of the treatment effectiveness of the prescribed treatment specifications based on the prescribed monitoring plans found in the East Sarpy Fire Burned Area Emergency Response Plan. The report will be provided in hard copy and electronic formats that will be distributed within the United States Government and will be made available to the public on United States Government administered websites. None of the reports will be considered proprietary to the contracted Implementation Leader or their associated firms.

The terms of the BIA Implementation Leader's contract will not exceed the three year term of the East Sarpy Fire Burned Area Emergency Response Plan and may be terminated at any time within the three year period for failure to achieve the prescribed emergency treatments within their specified time frames. To further clarify, all approved emergency stabilization treatments must be completed within one year of the date of control of the fire for the specific fire for which the treatment is prescribed. All approved rehabilitation treatments must be completed within three years of the control date of the fire for the treatment specification for which the fire was prescribed. Funding for implementing treatment specifications will only be provided on a cost reimbursement basis except for mutually agreed upon start up costs as pre-approved by a warranted contracting officer and for a case by case basis of supplies and materials as pre-approved by a warranted contracting officer.

The Implementation Leader will comply with all federal labor laws. Overtime must be approved in advance. Overtime will not exceed ten hours in a fourteen-day pay period. Payroll records must be submitted quarterly for documentation purposes.

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	Invasive Species Monitoring	**PART E Spec-#**	ES_3
NFPORS TREATMENT CATEGORY*	Monitoring	**FISCAL YEAR(S) (list each year):**	2013, 2014, 2015
NFPORS TREATMENT TYPE *	Ecosystem Recovery Monitoring	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	Hammond Ranch	**IMPACTED T&E SPECIES**	N/A

* See NFPORS Restoration & Rehabilitation module - Edit Treatment screen for applicable entries.

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description: In the spring of 2013, 2014, and 2015 assess for noxious weeds/non-native invasive plant species on reservation lands burned within the East Sarpy perimeter. Sites for detection will be previously known locations, roadways, hand lines, dozer lines, drop points, Incident Base Camp, Helibase, and other disturbed areas. Inventory for noxious weeds/non-native invasives in areas that have a high probability for invasion within the burned area and prescribe treatments to control the invasion and spread of the plants.

B. Location/(Suitable) Sites: Inventory areas that have a high potential for weed/invasive species invasion. Critical areas include roads, dozer lines, hand lines, drop points, helibase, Incident Base Camp, noxious weed wash station, and burned areas where suppression vehicles and equipment traveled through known noxious weed/non-native invasive plant species populations. Assess all visible noxious weed/non-native invasive plant species along road systems and drainages within the fire area.

C. Design/Construction Specifications:

1. Conduct detection monitoring of noxious weed/non-native invasive plant species populations within the burned area using protocol determined by the BIA Crow Agency. Detection monitoring will be conducted in areas disturbed by the fire and fire suppression activities.
2. Native vegetative cover and density will be assessed in late spring of 2013 to determine whether there is sufficient recovery to preclude invasive species. Monitoring locations will be in areas representative that are not transitional from one vegetation monitoring stratum to another, using local Tribal and agency specified methods.
3. Inventory, photo document, and map new noxious weed/non-native invasive plant species infestations within disturbed lands using Global Positioning System (GPS) technology.
4. Sampling should determine species composition and density.
5. Cover sampling methodologies shall represent dominant plant community type, aspect, and slope variations within the fire area. Photos shall accompany data records as supporting documentation of findings.
6. Initiate tribally approved control measures where detection demonstrates the establishment or expansion of noxious weed/invasive species populations. Direct treatment will occur when there is a threat to natural regeneration and recovery of native vegetation, establishment of effective ground cover, or expansion within and outside the burn area from invasive species inside the burned area. Treatment will require submission for supplemental funding on sites that were not known before the fire.

D. Purpose of Treatment Specifications (relate to damage/change caused by fire): Purpose is to detect the invasion or spread of noxious weeds and non-native invasive plant species and to prescribe treatments that will control the invasion or spread. Assessment is necessary to determine whether vegetative treatments are necessary to meet management goals and objectives. The level of analysis required will be commensurate with the complexity of the project, level of concern, and the objectives of the plan. Using Integrated Pest Management (IPM) techniques will help to minimize the establishment of non-native invasive species within the burned area. If recovery has not been met then additional funding requests must be prepared and submitted.

E. Treatment consistent with Agency Land Management Plan (identify which plan): Completion of Emergency Stabilization treatments are described in, and are consistent with the Crow Reservation 2009-2024 Forest Management Plan. Protection of beneficiaries and Indian trust resources is consistent with the BIA's mission.

F. Treatment Effectiveness Monitoring Proposed: Control and detection of noxious weeds/non-native invasive plant species in burned areas will be monitored according to the strategy outlined in the specification. Control will be considered successful upon determination that all noxious weeds have been controlled and non-native invasive plants have not spread beyond their pre-fire locations. Monitoring is required to ascertain whether vegetative recovery of habitat has, as anticipated, occurred. Additional treatments may be proposed if monitoring concludes that the criteria for re-vegetation success are not achieved.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
Two Resource Specialists: GS-09/5 @ $2,535.00/Pay Period(80Hrs) x 1 Pay Periods x 3 years	$15,210
TOTAL PERSONNEL SERVICE COST	**$15,210**

EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
Vehicle @ $500.00 / week x 2 weeks x 3 years	$3,000
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	**$3,000**
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
Miscellaneous field supplies	$500
Digital Camera	$200
TOTAL MATERIALS AND SUPPLY COST	**$700**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH MENTS	PLANNED COST
FY 13	5/1/2013	8/29/2013	C	Acre	$2.71	2,322	$6,303
FY 14	5/1/2014	8/29/2014	C	Acre	$2.71	2,322	$6,303
FY 15	5/1/2015	8/29/2015	C	Acre	$2.71	2,322	$6,304
						TOTAL	**$18,910**

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	M
3. Estimate supported by cost guides from independent sources or other federal agencies	T
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

See Appendix I, Vegetation Resource Assessment; See Appendix IV, Vegetation Treatment Map.

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	Invasive Species Treatment	**PART E Spec-#**	ES_4
NFPORS TREATMENT CATEGORY*	Invasive Species	**FISCAL YEAR(S) (list each year):**	2013, 2014, 2015
NFPORS TREATMENT TYPE *	Chemical Treatment	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	Hammond Ranch	**IMPACTED T&E SPECIES**	N/A

* See NFPORS Restoration & Rehabilitation module - Edit Treatment screen for applicable entries.

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description: In the spring of 2013 spray known noxious weed/invasive weed species locations burned within the perimeter of the East Sarpy Fire. Sites for detection will be previously known locations of Spotted knapweed *(Centaurea biebersteinii)*.

B. Location/(Suitable) Sites: Assess known locations of noxious weeds/non-native invasive plant species. See Vegetation Treatment Map, Appendix IV.

C. Design/Construction Specifications:

1. Apply Tordon herbicide to known noxious weed/non-native invasive plant species at a rate of 2 quarts per acre, to 78 known acres.
2. Map all treatments using Global Positioning System (GPS) technology. All treatments will be documented as to date, time of day, and current weather when treatment was being completed.
3. Use a colorant in the herbicide mix so treated areas are visually apparent.
4. Treatment should occur as soon in the spring as noxious weed/non-native invasive plant species are visible.
5. Electronic records of the treatments will be provided to the BIA, Crow Agency and the Rocky Mountain Regional Office, Branch of Natural Resources.

D. Purpose of Treatment Specifications (relate to damage/change caused by fire): Purpose is to limit the spread of noxious weed/non-native invasive plant species into burned areas until native grasses recover. Purpose is also to ultimately control the plant species to manageable levels.

E. Treatment consistent with Agency Land Management Plan (identify which plan): Completion of Emergency Stabilization treatments are described in, and are consistent with the Crow Reservation 2009 - 2024 Forest Management Plan and the Wildfire Management Plan 2010 - 2024. Rocky Mountain Regional Office currently funds a contract with the Big Horn County Weed District to provide weed spraying on the Northern Cheyenne Reservation. Protection of Indian beneficiaries and Indian trust resources is consistent with the BIA's mission.

F. Treatment Effectiveness Monitoring Proposed: Control will be considered successful upon determination that all noxious weeds have been controlled and non-native invasive plants have not spread beyond their pre-fire locations. Monitoring is required to ascertain whether vegetative recovery of habitat has, as anticipated, occurred. Additional treatments may be proposed in 2014 and 2015 if monitoring concludes that the criteria for re-vegetation success are not achieved.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
Range/Vegetation Specialist: GS-09/5 @ $2,535.00/Pay Period(80Hrs) x 0.5 Pay Periods	$1,268
TOTAL PERSONNEL SERVICE COST	**$1,268**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
Tordon 22K Herbicide @ $75.00/gallon X 39 gallons	$2,925
TOTAL MATERIALS AND SUPPLY COST	**$2,925**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
Vehicle @ $500.00/week x 1 weeks	$500
TOTAL TRAVEL COST	**$500**

CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY 13	4/15/2013	9/30/2013	C	Acre	$60.16	78	$4,693
						TOTAL	**$4,693**

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	M
3. Estimate supported by cost guides from independent sources or other federal agencies	T
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

See Appendix I, Vegetation Resource Assessment; See Appendix IV, Vegetation Treatment Map.

BURNED AREA REHABILITATION (BAR)

PART E - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	Reforestation	**PART E Spec-#**	BAR_1
NFPORS TREATMENT CATEGORY*	Reforestation	**FISCAL YEAR(S) (list each year):**	2013, 2014
NFPORS TREATMENT TYPE *	Cone Collection, Planting	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	Hammond Ranch	**IMPACTED T&E SPECIES**	N/A

* See NFPORS Restoration & Rehabilitation module - Edit Treatment screen for applicable entries.

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description: Reforestation by hand planting ponderosa pine *(Pinus ponderosa)* seedlings on 180 acres of commercially designated forested Indian trust lands on the Crow Indian Reservation. This will include collection of ponderosa pine cones for seed extraction.

B. Location/(Suitable) Sites: See the treatment map for the Burned Area Emergency Response (BAER) Plan. Planting sites are located within the perimeters of the East Sarpy Fire. All commercial forestlands were designated during a reservation wide forest cover typing project completed in 2003. These acres are designated as commercial forestland. North and east facing slopes should be prioritized for planting. South and west facing slopes should only be considered for planting if other sites are unavailable.

C. Design/Construction Specifications:

1. Collect and process ponderosa pine cones to procure seed sufficient to grow the required seedlings to plant 180 acres of forestland.
2. Grow 54,360 containerized ponderosa pine seedlings. These will be grown to current height and caliper standards within established sized plugs. The Crow Agency currently has seedling quality standards with a proven nursery.
3. Hand plant 180 acres of commercial forestland at a rate of 302 trees per acre (12 foot by 12 foot spacing).
4. Trees will be hand planted according to established guidelines at Crow Agency.
5. Trees will be stored in a frozen state or in a cooler before being taken to the field for planting. Trees will be kept in the shade at all times and when removed, will be planted in the ground as immediately as possible.

D. Purpose of Treatment Specifications (relate to damage/change caused by fire): The purpose of the treatment is to re-establish forest vegetation on commercially designated forestlands (areas which experienced almost total mortality and has no available natural seed source) for watershed stabilization, wildlife habitat, scenic and recreational values, and timber production.

E. Treatment consistent with Agency Land Management Plan (identify which plan): Completion of Burned Area Rehabilitation (BAR) treatments are described in, and are consistent with the Crow Reservation 2009-2023 Forest Management Plan and the Wildfire Management Plan. Protection of beneficiaries and Indian trust resources is consistent with the BIA's mission.

F. Treatment Effectiveness Monitoring Proposed: The Rocky Mountain Regional Office forester responsible for forest development will insure a representative sample of planted areas are inspected to insure conformance with the 53 IAM Forest Development Handbook 5-H and Regional reforestation standards.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
1 Forester for Contract Administration: GS-09/5 @ $6,030/month x 1months x 1 years	$6,030
3Forestry Technicians For Planting Inspections: GS-04/5 @ $3,560/month x 0.5 months x 1years	$5,340
1 Forestry Technician For Treatment Effectiveness Monitoring: GS-05/5 @ $4,000/month x 0.5month x 1years	$2,000
TOTAL PERSONNEL SERVICE COST	**$13,370**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
Nursery stock includes delivery(ponderosa pine seedlings) : 54,360 seedlings @ $0.30 per seedling	$16,308
TOTAL MATERIALS AND SUPPLY COST	**$16,308**

TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
1 Vehicle @ $1,000/ month x2 months x 2years	$4,000
TOTAL TRAVEL COST	**$4,000**
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
Collect and process and transport 20 bushels of ponderosa pine cones for seed @ $144.00 per bushel	$2,880
Hand plant ponderosa pine seedlings on 180 acres @ $170.00 per acre (includes tribal administration)	$30,600
TOTAL CONTRACT COST	**$33,480**

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH MENTS	PLANNED COST
FY 13	4/01/2013	6/15/2013	C	Acres	$373.10	90	$33,579
FY 14	4/01/2014	6/15/2014	C	Acres	$373.10	90	$33,579
						TOTAL	**$67,158**

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	M
3. Estimate supported by cost guides from independent sources or other federal agencies	T
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

See Appendix I, Ash Creek Fire Complex Vegetation Resource Assessment; See Appendix IV, Ash Creek Fire Complex Vegetation Treatment Map.

BURNED AREA EMERGENCY RESPONSE PLAN

2012 EAST SARPY FIRE

APPENDIX I **RESOURCE ASSESSMENTS**

- **FOREST AND VEGETATION RESOURCE**
- **CULTURAL RESOURCE**
- **WILDLIFE RESOURCE**
- **WATERSHED RESOURCE**

BURNED AREA EMERGENCY RESPONSE PLAN

EAST SARPY FIRE

VEGETATION AND FOREST RESOURCE ASSESSMENT

I. OBJECTIVES

- Evaluate and assess fire and suppression impacts to vegetative resources.
- Determine emergency stabilization needs to aid in vegetative recovery and soil stabilization efforts and to mitigate impacts to sensitive plant species.
- Evaluate the potential for non-native invasive plant species encroachment into native plant communities and sensitive plant species habitat within the fire area and determine stabilization needs to mitigate encroachment.
- Assess forestland health and recovery.

II. ISSUES

- Identify impacts to leases and lessees.
- Potential for invasion of impacted lands by noxious weeds and non-native invasive plant species.
- Identify fire impacts to lease, allotment boundary and Crow Reservation boundary fences.
- Identify need for grass seeding on dozer lines.

III. OBSERVATIONS

This report addresses known and potential impacts to vegetation communities by the East Sarpy Fire on the Crow Reservation. The trust acres within the fire perimeter are as follows: East Sarpy Fire, 51,594 acres. The perimeter also includes 27,317 acres of non-Indian owned (fee) lands. This assessment will only address the trust lands within the fire perimeter.

The burned area consists of approximately 7% forestland and 93% rangeland. A large majority of the small timber stands showed mortality in the 75-100% range, but due to their location, the poor economic outlook for the timber industry, and lack of local lumber producers, reforestation will not be proposed. Damage to stands in the Castle Rock area however, will be proposed for reforestation. Other vegetation species, such as grasses and shrubs were minimally impacted and a full recovery is expected to occur when fall moisture arrives.

Numerous farm and pasture leases were affected by the fire. The fire consumed approximately 70% of the available grass on the rangeland. At this time, most livestock using the range units affected by the burns are concentrated in unburned areas or have been moved to other pastures. There have been no reports of livestock lost as a result of this fire. Lessees are concerned about forage loss for the remainder of the season, grazing areas impacted, noxious weed encroachment, and damage to fences.

A. Background

The East Sarpy Fire started from a dry lightning storm which occurred in southeast Montana on July 31, 2012. The East Sarpy Fire ended up being a culmination of six fires that began that same day. These fires were the Dawes, West Tullock, East Tullock, Bluebird, East Sarpy and Sarpy Hills. The largest was the East Sarpy Fire which burned 50,000 acres in the first day.

A Type II Incident Management Team (IMT) was ordered on August 2, 2012, when the fire was most active. During this time the fires had burned together into one large fire. Bob Fry's Type II IMT took over the fire on August 3, 2012, and turned the fire back to a Type IIII IMT on August 10, 2012. The Type III organization is currently performing additional mop-up and rehabilitation to suppression damages. Full containment occurred on August 9, 2012.

Findings and recommendations discussed in this assessment are based upon information obtained from personal observations, interviews with Tribal and BIA natural resource managers, and other BAER team members.

B. Vegetation

A variety of vegetation communities occur within the boundaries of the East Sarpy Fire. Although there was some mortality in forested stands, active forest management practices within the burned area resulted in a significant number of forestland acres surviving. Impacts to the shrub and grass component of the vegetation present on the fires were minimal and understory grasses had already started to re-sprout and were observed while conducting the field reconnaissance. Table 1 displays the existing vegetation type groups and component within the fire perimeters.

Table 1: Vegetation Types Impacted by the East Sarpy Fire

Vegetation Community	Total Acres	Percent
Inter-Mountain Basins Big Sagebrush Steppe	31,299	61
Western Great Plains Floodplain Systems	1,167	2
Northwestern Great Plains Mixedgrass Prairie	15,678	30
Black Hills Ponderosa Pine Woodland and Savanna	3,450	7
Grand Total	**51,594**	**100**

The LANDFIRE map layer of existing vegetation types showed numerous vegetation communities within the perimeters of the East Sarpy Fire. Due to scale of mapping, accuracies of satellite imagery, simulation models and lack of total ground truthing on the Crow Reservation, some of the vegetation types were merged with other like vegetation types to better reflect local management needs. The map layer created for this assessment was derived from the 2010 LANDFIRE Existing Vegetation Type Layer (EVT). The five vegetation types are described below

Inter-Mountain Basins Big Sagebrush Steppe

The Inter-Mountain Basins Big Sagebrush Steppe vegetation community encompasses eastern and central Montana and is essentially a sagebrush-wheatgrass steppe, where western wheatgrass *(Pascopyrum smithii)* and Wyoming big sagebrush *(Artemesia tridentata ssp. wyomingensis)* are dominant. Included are cool season grasses such as Indian ricegrass *(Oryzopsis hymenoides)*, bluebunch wheatgrass *(Agropyron spicatum)*, needle-and-thread *(Stipa comata)*, blue grama *(Bouteloua gracilis)*, Sandberg bluegrass *(Poa sandbergii)*, squirreltail *(Elymus elymoides)*, and threadleaf sedge *(Carex filifolia)*. Common forbs are species of *Astragalus*, *Crepis*, *Delphinium*, *Phlox* and *Castilleja* with

associated shrub-like species like green rabbitbrush *(Chrysothamus viscidiflorus),* fringe sagewort *(Artemesia frigida)*, winterfat *(Krascheninnikovia lanata)*, and broom snakeweed *(Gutierrezia sarothrae)*.

Western Great Plains Floodplain Systems

The Western Great Plains Floodplain System vegetation community encompasses the woody draws that concentrate watershed flows down canyon towards Tongue River. Dominant types may include green ash *(Fraxinus pennsylvanica)*, boxelder *(Acer negundo)*, and eastern cottonwood *(Populus deltoides)*. Important grasses are Canada wildrye *(Elymus canddensis)* and marsh muhly (*Muhlenbergia racemosa)*. Understory species in the later seral stages may include dogwood, currents, snowberry, wild rose and chokecherry.

Northwestern Great Plains Mixedgrass Prairie

The Northwestern Great Plains Mixedgrass Prairie vegetation community covers the northern prairies of the Rocky Mountains from north central MT to southeastern MT. The vegetation is dominated by cool and warm season perennial grasses, grama grasses, and rhizomatous grasses. Thickspike wheatgrass *(Elymus macrourus)* and western wheatgrass are also present. Idaho fescue *(Festuca idahoensis)* is a community dominant while bluebunch wheatgrass is more prevalent in eastern Montana. Shrubs and sub-shrubs (Wyoming big sagebrush, silver sagebrush, rabbitbrush, fringed sagewort, and western snowberry) cover less than five percent of the ground. Most of the ground surface is covered and bare ground is less than 10% on more mesic sites and 20% on more xeric sites. The most common shrub is silver sagebrush *(Artemesia cana)* which re-sprouts after fire.

Black Hills Ponderosa Pine Woodland and Savanna

The Black Hills Ponderosa Pine Woodland and Savanna vegetation community is located in the lower elevations of eastern Montana. This is the ponderosa pine (*Pinus ponderosa*) savanna that is not in the mountains of the Rockies. This type is dominated by interior ponderosa pine and is often the only tree present. Understory composition varies but Rocky Mountain juniper *(Juniperus scopulorum),* skunkbush sumac *(Rhus trilobata)*, mountain mahogany *(Cercocarpus montanus)*, snowberry *(Symphoracarpus albus)*, chokecherry *(Prunus virginiana)* and yucca *(Yucca glauca)* are common woody species. Herbaceous species include needlegrasses, grama grasses, little bluestem *(Schizachyrium scoparium),* western wheatgrass, sedges and bluebunch wheatgrass. There is Idaho fescue *(Festuca idahoensis)* as far east as Ashland, Montana.

C. Management Direction

Management direction as outlined in the Forest Management Plan (FMP) for the Crow Reservation (2009 through 2024) allows for the commercial sale of timber within the areas impacted by the fires. The FMP also calls for immediate reforestation of commercial stands destroyed by fire.

Numerous farm and pasture leases were impacted by the East Sarpy Fire along with non-Indian owned fee lands. The lessees and fences impacted by the fire cannot receive funding through the BAR process as a comprehensive Range Management Plan doesn't exist for that part of the reservation. Therefore, repair is up to the individual lessee, landowner or the Crow Tribe.

D. Tree Damage and Mortality

Numerous factors influence post-fire tree mortality, including: season the damage occurred, pre-fire tree vigor/site quality, extent of crown damage, extent of cambium damage, post-fire stand density/competition, post-fire climatic conditions, and

insect/disease damage. The following guidelines were derived largely from research by Wagener (1961) and other sources as noted:

Season: Conifers are most susceptible to fire damage early in the growing season because retention of sufficient green foliage is necessary to carry the tree through the remainder of the growing season and provide some food reserves for the following year. If the fire occurred during hotter, drier weather, even moderate levels of crown scorch can be expected to have serious effects on tree vigor and mortality levels.

Tree Vigor/Site Quality: Younger, more vigorous trees on good sites have a better chance of survival than over-mature trees on poor sites.

Crown Damage: The amount of live crown remaining, as distinguished from green foliage, is the most important single factor in survival of fire-scorched ponderosa pine. Green needle bases indicate that the surrounding parts of the crown are still alive; conversely, darkened needles and needles "frozen" in position in the direction of fire-run are unmistakable indicators the surrounding crown is dead. The minimum green foliage requirement for vigorous ponderosa pine survival is estimated to be 35 percent of the pre-fire crown. Minimum post-fire survival criteria for moderately vigorous trees, such as those growing on a poor site, is 40-45 percent of the pre-fire crown.

Cambium Damage: Based on preliminary results, Ryan (1990) has reported that, in the absence of significant crown injury, most trees survive up to 25 percent basal girdling, whereas few survive more than 75 percent.

Post-Fire Stand Density and Competing Plants: Potter and Foxx (1979) reported decreased recovery as stand density increased above 130 trees per acre. Another contributing factor cited for poor recovery was competition from seeded grass.

IV. Reconnaissance Methodology and Findings

The Rocky Mountain Region's Regional Forester held a meeting with the Crow Agency Superintendent on August 3, 2012 to discuss the ordering of a BAER Team for the East Sarpy Fire. The Regional BAER Team Coordinator sent a sample BAER Team Request to the Superintendent on Monday, August 5, 2012. The Superintendent returned the signed BAER Team Request, a funding request and Delegation of Authority the next day, which began the formal BAER Team Request. A BIA BAER Team mobilized and held the first in-briefing at 1600 hours on August 9, 2012. This Team consisted of the Rocky Mountain Regional BAER Coordinator, the Team Leader, and the Forestry/Vegetation Specialist. The Team then proceeded to the Incident Command Post (ICP) to discuss operations with the Type II Incident Management Team. The BAER Team consists of 11 personnel at this time.

The forestry/vegetation specialists began on the ground field observations on August 11 and concluded field work on August 14, 2012. A reconnaissance flight was also taken over the fire on August 13, 2012.

1. Tree Hazards

Roads within the burned area were surveyed by vehicle for hazard trees. Hazard trees have been mitigated by East Sarpy Fire suppression personnel. No further hazard tree mitigation is necessary at this time, but may become an issue next year as the dead and damaged trees begin to deteriorate.

2. Forest Mortality

The degree of fire-related mortality was determined by aerial survey on August 13, 2012, and on the ground by BAER foresters on August 11-14, 2012. Forest mortality was classified into three categories: un-burned, low-moderate, and high. The low-moderate

mortality acres are considered as part of the un-burned category for this assessment. Treatments or salvage will only be considered on those acres designated as high, and only those acres designated as ponderosa pine. A minor component of the forestland acres is green ash. There will be no treatments proposed on this species. Active forest management on the reservation limited mortality in some cases. The following Table (Table 3) shows the acres of mortality along with the green (mainly unburned) timber acres remaining. In many cases, the stands that are considered high mortality may have residual green trees within, but are scattered enough that designation as a stand is impossible.

Table 3: Timber Mortality

Fire	High Mortality Burned Acres	Unburned Acres	Total Acres
East Sarpy	1,952	1,599	3,551
Total Acres	1,952	1,599	3,551

3. Salvage of Timber Mortality

A potential timber salvage operation is being developed by Crow Agency Forestry Staff. An estimated 3.70 MMBF (3.70 million board feet) of dead ponderosa pine timber could be salvaged off of 1,937 acres of mortality (15 acres of green ash type not included). This volume was calculated from timber type volume data that is being used by the Agency to determine volumes of timber associated with Realty cruises. All sawtimber classes have an average net volume per acre figure that was correlated with the timber types on the fires. This volume data assumes all merchantable volume will be removed from the stands with no residual sawlog volume remaining. The volumes were reduced approximately 35% from the net volume per acre figures to account for loss of volume in the smaller diameter classes due to checking and the eventual increase in top diameter size limits. Many of the burned stands also occur in isolated areas north of Highway 212 and south of Highway 384. These stands are probably uneconomic under current market conditions, so the opportunities for removal under a salvage scenario are minimal. The timber type data layer was developed from a timber typing contract in 2003. Table 4 shows estimated net volumes potentially salvageable from the East Sarpy Fire. The volume estimated remaining in the green timber stands is 4.60 MMBF. This volume was not considered as salvage material in Table 4, but harvest of green volume may make the salvage more saleable.

Table 4: Timber Volume Potentially Available for Salvage (MMBF)

Fire	High Mortality Burned Acres Salvageable	Burned Volume	Unburned Acres Remaining	Green Volume
East Sarpy	1,937	3.70	1,599	4.60
Total	1,937	3.70	1,599	4.60

4. Continuous Forest Inventory (CFI) Plots

The CFI is used by forest management to monitor forest volume, growth data, insect and disease problems, tree condition and other data. Trees are tagged and re-measured approximately every 10 to 15 years. There are CFI plots that may have been affected by the fires, but these plots haven't been measured for many years and there are no plans to evaluate them for damage.

5. Threatened & Endangered (T & E) Plants

The United States Fish & Wildlife Service, Montana Field Office, was contacted for vegetative information for the Crow Reservation, and the presence or absence of T & E plant species. No T & E plant species reside within the perimeter of the East Sarpy Fire.

6. Spread of Noxious and Invasive Weeds Species

Crow Agency and Tribal resource staff personnel were contacted for vegetative information on the Crow Reservation. There is minimal information on known noxious and/or invasive weed species within the fire perimeter of the East Sarpy Fire. A specification will be prepared to treat the known noxious weeds/invasives. The volume of fire traffic on reservation roads, and the lack of vehicle wash stations early on in the incident, would suggest some weeds were transported onto reservation lands. These locations will need to be monitored to determine if any noxious weed invasions occur after the fire. Monitoring should occur for at least three years after the fire.

7. Fence Damage

Damaged fences from the wildfire and the suppression effort were noted during the field evaluations. Some damage occurred to wooden fence posts and braces and it appeared that some heat damage to wire resulted. Rehabilitation will be done under suppression funding in the few instances where damage occurred due to the suppression effort. Suppression personnel will repair these damages. Since a comprehensive Range Management Plan does not exist for the area that encompasses the East Sarpy Fire, Burned Area Rehabilitation (BAR) funding cannot be requested. The Natural Resource Conservation Service (NRCS) or Farm Services Agency (FSA) may have cost share funds available upon request to assist lessees and the tribe in fence repairs within the burned area.

8. Grass Seeding

Grass seeding will not be needed on any of the burned lands within the perimeter of the East Sarpy Fire. Grass recovery (sprouting) is already occurring and the fires were flashy enough that residence time was short. The agency suppression organization has rehabilitation guidelines that cover the seeding of dozer and hand lines. The guideline includes the native species grass seed mix that should be used on the lines at 12 pounds per acre. The seeding should occur right before or during a rain or snow event to assist with germination of the seed. The seed mix recommended is as follows:

- 8lbs/acre luna pubescent wheatgrass *(Agropyron trichophorum)*
- 2lbs/acre green needlegrass *(Stipa viridula)*
- 2lbs/acre Pryor slender wheatgrass *(Elymus trachycaulus)*

9. Water Developments

Within the perimeter of the East Sarpy Fire, numerous water developments were noted. Most of the stock water is impounded by earthen dams but wells and stock tanks also occur throughout the fire. No damage to any water development was observed.

V. RECOMMENDATIONS

A. Emergency Stabilization Specifications

Specification # ES 3-Invasive Species Monitoring

In the spring of 2013, 2014, and 2015 assess for noxious weeds/non-native invasive plant species on reservation lands burned within the perimeter of the East Sarpy Fire. Sites for detection will be previously known locations, roadways, hand lines, dozer lines and other disturbed areas. Inventory all known sites with high probability of an increase in invasive species populations. These high probability sites include those areas disturbed by hand or dozer line, increased road use, and other disturbed areas. Approximately 2,322 acres will be assessed on the Crow Reservation.

Specification # ES 4-Invasive Species Treatment

In the spring of 2013, treat approximately 78 acres of known spotted knapweed *(Centaurea biebersteinii).* The application will use Tordon herbicide at a rate of 2 quarts per acre. All treatments will be documented using Global Positioning System (GPS) technology and will also be documented as to date of treatment, time of day and weather conditions during treatment. The applicator will use a colorant in the tank mix of herbicide. Treatment should occur as soon in the spring as noxious weed/non-native invasive plant species are visible. Electronic records of the treatments will be provided to the BIA Natural Resources Program.

B. Rehabilitation Specifications

Specification # BAR 1-Reforestation

Reforest all commercial forest acres that were heavily damaged or destroyed (75-100% mortality) by the East Sarpy Fire. Approximately 180 commercial forest acres are eligible for reforestation under a Burned Area Rehabilitation (BAR) Plan.

C. Management Recommendations, Non-Specific

Salvage of Commercial Timber – Salvage burned commercial timber within accessible burned and partially burned stands.

Insect Population Monitoring – Monitor insect activity by way of aerial and ground surveys.

Boundary and Range Fencing – Prepare a comprehensive Range Management Plan that will cover all farm and pasture leases on the Crow Reservation. This will allow the lessees in the future to request Burned Area Rehabilitation (BAR) funding to assist with repair of fencing damaged by fire.

Immediate Removal of all Livestock – Remove all livestock that still reside within the fire perimeters.

Deferment - Recommend deferment of grazing on the burned trust lands in the East Sarpy Fire for the remainder of the 2012 grazing season and into green-up and the establishment of seed heads for the 2013 grazing season. This deferment will be beneficial to the long term sustainability of the grazing lands by allowing the vegetation to regenerate to a healthy mature stand and produce seeds before being subjected to the stress of grazing. If grazing is allowed too soon, forage availability and the production of seeds may be reduced adding to the already stressed environment as a result of the fires. Therefore, a deferment is recommended

VI. CONSULTATIONS

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C. Keene Bends, BIA Crow Agency Admin. Mgr.	(406) 638-2827
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Bryce Rogers, BIA Crow Agency FMO	(406) 208-2035
Wilford BirdinGround, BIA Crow Agency Land Services	(406) 638-4411
Caleb Cain, BIA Rocky Mtn. Region Regional Forester	(406) 247-7949

REFERENCES

Crow Forest Management Plan, 2009 – 2024

Crow Wildland Fire Management Plan, 2010 - 2024

Crow Agency Realty Cruise Project Statistics Data

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Wagener, W. W. 1961. Guidelines for Estimating the Survival of Fire Damaged Trees in California. Pacific Southwest Forest & Range Experiment Station, Berkeley, Calif. 11p.

2010 LANDFIRE Existing Vegetation Type Layer (EVT)

Eric Rhodenbaugh, Forester (307) 349-2300
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BURNED AREA EMERGENCY RESPONSE PLAN

EAST SARPY FIRE

CULTURAL RESOURCE ASSESSMENT

I. OBJECTIVES

- Assess potential damage to cultural resources for the purpose of recommending treatments to stabilize archaeological sites, traditional cultural properties, and historic structures from adverse effects of wildland fire, suppression activities, post fire erosion, and emergency stabilization and rehabilitation actions.
- Conduct assessments necessary to meet Federal legal mandates.
- Consult with appropriate Native American tribes as necessary to meet Federal legal requirements, agency policies, and agreements.
- Prescribe possible measures to avoid or mitigate adverse effects to cultural resources that may result from emergency stabilization treatments.
- Assess effects to known historic and prehistoric cultural resources as the result of fire.

II. ISSUES

- What effects has the fire had on Ceremonial Areas (and other Traditional Cultural Properties (TCPs), what potential exists for post-fire effects to these resources, and are there proposed emergency stabilization treatments that could impact TCPs?
- How have known archaeological sites been impacted by the fire?
- Are there expected to be post-fire effects to these resources and proposed emergency stabilization treatments that could impact the integrity of archaeological sites?

III. OBSERVATIONS

A. **Background** - This report addresses potential and actual effects to cultural resources within the East Sarpy Fire. These fires originated on Wednesday August 1, 2012 and burned an estimated 77,915 acres resultant from a series of eighteen separate lightning caused starts.

The East Sarpy Fire Complex is located mostly within the Reservation boundary of the Crow people.

Cultural Chronology for the Northern Plains

Period	Phase	Date
Paleoindian	Clovis	10,000-8,000 B.C
	Folsom	ca. 8,000 B.C.
	Plano	6,000-4,000 B.C.
Plains Archaic	Early, Middle and Late	4,000-250 B.C.
Plains Woodland	Besant	A.D. 1-800

Plains Village Period		A.D. 900-1850
Historic Period		A.D. 1850-1960
Contemporary		A.D. 1960-Present

Culture History

The Paleoindian Period: This period represents the earliest well-defined occupation in North America. It is defined by lancolate projectile points occasionally found in association with the remains of extinct Pleistocene megafauna (Irwin and Wormington 1970).

The Archaic Period: This second sequence is distinguished from the Paleoindian Period by the presence of a wide variety of smaller, more crudely manufactured projectile points and an increase in the occurrence of stone tools (Jennings 1974). The tool technology reflects a shift in subsistence patterns towards smaller game and increased use of plant resources.

Plains Woodland Period: During this period horticulture is first practiced, and along with this technological shift came a semi-sedentary to sedentary lifestyle. While some villages were occupied on a permanent basis, most were occupied seasonally, as hunting and gathering were still important activities.

Plains Village Period: This period is typified by large scale sedentism based on maize agriculture with permanent villages of large earth covered lodges perched along major streams and rivers. Coincident with sedentary cultures were semi-nomadic peoples including the Crow, and Cheyenne who followed the great bison herds, as well as relying on hunting of small game and gathering.

Historic Period: The Crow Indians are of Siouan origin but had broken away from their ancestral group (Hidatsa) and settled along the valleys of the Yellowstone and Big Horn Rivers in northern Wyoming and south central Montana long before the coming of the white man. The Crow people were originally called the “Absarokee” which means “children of the large beaked bird”. Other Indian tribes, in referring to the Crows in sign language, would simulate the flapping of the bird’s wings in flight. The white man interpreted this sign to mean the bird “crow” and thus called the tribe the Crows. The Crow Tribe signed their first peace treaty with the U.S. Government in 1825, the Laramie Treaty of 1851 and the second Laramie Treaty of 1868. Subsequent land cessions to the United States, the Northern Pacific Railroad, the state of Montana, and sales to non-Indians eventually reduced the Crow holdings in trust ownership to 2,282,000 (Figure 1) by September of 1977 (USADOI-BIA 1978). Through various periods of turmoil with the federal government, the Crow tribe managed to restore much of their sovereignty and thereby maintain much of their cultural traditions.

Figure 1: Crow Indian Reservation.

Cultural Resources

Traditional Cultural Properties – This category includes ceremonial places and gathering/resource procurement areas of concern to the tribe. These places are sensitive, irreplaceable resources essential to the sustenance of traditional lifeways.

Archaeological Sites – Cultural resources that occur in this land are typical to lithic scatters, TCPs, campsites (both historic and prehistoric), grave sites and historic battle sites.

Historic Sites – This category includes homesteads and outbuildings, and features associated with livestock production. Construction materials can be metal, masonry, wood or any combination of those and other materials.

Cemeteries - Crosscutting all time periods and cultures, cemeteries and other burial locations are places of extreme significance to cultures and their descendents. These are protected under state and federal law.

B. **Reconnaissance Methodology and Results** – A BAER Archeologist was dispatched to the incident on August 10, 2012. On August 10th, the BAER archeologist met with staff of the Crow Tribal Historic Preservation Office and Cultural Committee. The purpose of this meeting was to acquaint THPO and Bureau staff with the BAER process as it pertains to cultural resources. THPO and Cultural Committee staff members expressed that their cultural resources information was extremely confidential and not generally shared with anyone from the outside. A Crow Archeological Technician escorted the BAER Archeologist in order to perform the necessary cultural assessment for the BAER process. The Crow Archeological Technician and BAER Archeologist assessed all federally documented sites as well as sites known by the Tribe within the burn area that may be at risk from post fire effects. Four federally documented sites and two Tribal known sites were identified as the subjects of the BAER cultural assessment.

C. **Findings** - The BAER cultural assessment took place on August 11th and 12th 2012. The cultural assessments were conducted by BAER archeologist Justin Moschelle, escorted by Tribal archeological technician, Bruce Dawes.

Five archaeological sites and one cultural site were assessed for risks from post-fire effects. None of the six sites were found to be at risk from post-fire effects.

Site No.	Site Discussion	Fire Impacts	Recommendations
CA1340-01	Fasting Site	None	None, site was crossed by fire activity sustaining no damage. No stabilization is necessary.
CA1340-02	Lithic Scatter/Rock Art	None	None, site was crossed by fire activity sustaining no damage. No stabilization is necessary.
CA1340-03	Fasting Site	None	None, site was crossed by fire activity sustaining no damage. No stabilization is necessary
CA1340-04	Lithic Scatter	None	None, site was crossed by fire activity sustaining no damage. No stabilization is necessary
Temp #1	Fasting Site	None	None, site was crossed by fire activity sustaining no damage. No stabilization is necessary

Temp #2	Historical Marker	None	None, site was crossed by fire activity sustaining no damage. No stabilization is necessary

IV. RECOMMENDATIONS

A. Emergency Stabilization

No emergency stabilization needed.

B. Management Recommendations – Non-Specification Related
Describe the recommendation and reasons.

1. Conduct archaeological survey of dozer lines throughout the East Sarpy Fire. Dozer lines are known to have impacted at least one archaeological site.

2. Secure outside source(s) of funding to conduct intensive archaeological surveys within the fire perimeter before vegetation is re-established.

3. Conduct cultural resource surveys prior to any rehabilitation treatments, salvage logging or other ground disturbing actions. This is in accordance with Section106 of the National Historic Preservation Act.

4. Regularly monitor site "Castle Rock" for unauthorized collection and excavations. Exclude cattle from deflation areas until vegetation can become re-established.

V. CONSULTATIONS

Crow Tribal Historic Preservation Office. Hubert Two Leggins, THPO

Crow Tribal Historic Preservation Office. Bruce Dawes, Archaeological Technician

Crow Cultural Committee. Stan Pretty On Top, CCC

VI. REFERENCES

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BURNED AREA EMERGENCY STABILIZATION PLAN

EAST SARPY FIRE

WILDLIFE RESOURCE ASSESSMENT

I. OBJECTIVES

- Assess effects of the fire suppression actions on Federally listed Threatened and Endangered species and their habitats.
- Prescribe emergency stabilization measures as needed.
- Assess effects of proposed stabilization actions to listed species and habitats.
- Conduct Section 7 Emergency Consultation with the U. S. Fish and Wildlife Service.

II. ISSUES

- Federally listed species occur or are believed to occur on the Crow Reservation.
- Species important to the Crow Tribe occur within the area directly influenced by the fire.

III. OBSERVATIONS

A. Background

The East Sarpy Fire started from a dry lightning storm that came through southeast Montana on July 31, 2012. This fire was one of six reported fires in the area that grew into the East Sarpy Fire. These fires were the Dawes, West Tullock, East Tullock, Bluebird, East Sarpy and Sarpy Hills. The largest was the East Sarpy and it burned 50,000 acres in the first day. Crow Fire Dispatch ordered a Type II Team on August 2, 2012, and Fry's IMT took over the fire on August 3, 2012.

The BIA, Regional Forester held a meeting with the Crow Agency Superintendent on August 3 to let them know they could request a BAER Team. The Regional BAER Team Coordinator sent a sample BAER Team Request to the Superintendent on Monday, August 5. The Agency Superintendent returned the signed BAER Team Request, Funding Request, and Delegation of Authority which allowed the BAER Team to moblize. The following day, the BAER Team mobilized and held the East Sarpy Fire In-briefing at 1600 in the Cultural Building of the Little Big Horn College in Crow Agency, Montana.

Vegetation resources within the fire perimeter were affected to varying degrees depending on intensity and severity. Fire intensity refers to the effects of fire on vegetation resources; burn severity refers to the effects of fire on soils and hydrologic function. High burn severity affected 103 acres (0.2%); an additional 9,338.5 acres (18.1%) burned with moderate severity, and low severity burns occurred on 36,941.3 acres (71.6%). Approximately 5,211acres (10.1%) within the fire perimeter remain unburned on reservation lands.

At the peak, total suppression resources assigned to the East Sarpy Fire included; 700 personnel. Fry's IMT turned the East Sarpy Fire over to the agency on August 10, 2012.

The purpose of this wildlife assessment is to determine fire effects and suppression effects of the proposed stabilization measures on species of concern. The species in question are listed under C. Findings. This list was provided to the BAER Team Wildlife Specialist, in consultation with the U.S. Fish and Wildlife Service (USFWS) and the Crow Tribal Natural Resources Department. Species data were obtained through routine field surveys as well as incidental observations documented by the Crow Tribal Natural Resources Department, Regional Wildlife Biologist and the USFWS.

The USFWS was contacted by the BAER Wildllife Specialist via phone calls and email on August 5 and 8. The information provided by the USFWS relates to federally listed threatened and endangered species which occur or may occur in the vicinity of the East Sarpy Fire on the Crow Reservation, August 3, 2012. The fire affected approximately 50,594 acres of Trust land.

The U.S. Fish and Wildlife Service (USFWS) maintains the current Threatened, Endangered, Proposed, Candidate (TEPC) species list and publishes the information in the Federal Register. The Montana Field Office of the US Fish and Wildlife Service Montana provided an updated TEPC species list for Big Horn county in Montana. Table 1 displays the comprehensive list of TEPC species evaluated for the tribal lands within the East Sarpy Fire area. There are no listed plant species within the East Sarpy Fire perimeter.

Table 1. TEPC species.

SPECIES	SCIENTIFIC NAME	LISTING STATUS
Black-footed Ferret	*Mustela nigripes*	Endangered
Greater Sage Grouse	*Centrocercus urophasianus*	Candidate
Sprague's Pipit	*Anthus spragueii*	Candidate

B. Reconnaissance Methodology and Results

Reconnaissance included field visits on August 11 and 12, 2012. Determination of pre- and post-fire population estimations and habitat status within the burned area was accomplished through historical observations, routine field observations, and previous wildlife surveys conducted by the Crow Tribal Natural Resource Department and the USFWS. It was determined that the black-footed ferret has not been observed in the prairie dog towns in or near the area prior to the East Sarpy Fire, therefore it was determined that ferrets are not in the area affected by the fire.

BAER watershed and vegetation specialists estimated soil burn severity and vegetation mortality to determine effects to soil and vegetation resources. To better understand the species and habitat information briefly discussed in this wildlife assessment, it is important to review the East Sarpy Fire BAER Vegetation and Watershed Assessments. These reports contain more detailed descriptions of pre-fire vegetation, post-fire vegetative recovery estimates, and effects to watersheds.

C. Findings

Routine field surveys and short-term monitoring efforts reveal that there should be no adverse effect to wildlife and fish species inhabiting the area of concern. Since there was no evidence indicating that TEPC species would be adversely affected, Emergency Section 7 Consultation will not be initiated. Consultation efforts with the BIA Regional Wildlife Biologist occurred on August 13 and 14, 2012, at the BIA Regional Office in Billings, MT.

Black-Footed Ferret *(Mustela nigripes)*

The black-footed ferret is an endangered species native to North America. A member of the weasel family, the black-footed ferret's body is long and slender. It is tan and has black feet and legs. Its tail has a black tip. The black-footed ferret has black markings on its face that resemble a mask. They live only three to four years in the wild and eight to nine years in captivity.

Habitat & Range

The black-footed ferret sets up residence in prairie dog burrows. The habitat of the prairie dog is grasslands and prairies throughout the Midwest and Western United States. Black-footed ferrets choose prairies with the highest prairie dog populations. The black-footed ferret is an extreme specialist, depending on the prairie dogs (Cynomys spp.) of North American grasslands for food and using prairie dog burrows for shelter. There are no current data documenting any black-footed ferret occurrence on the Crow Reservation. The last documented sighting was in 1949.

Direct effects as described in this report refer to individual mortality or disturbance resulting in take (harm or harassment) of the animal. Indirect effects refer to modification of habitat and/or prey species and possible subsequent effects to the species.

DIRECT EFFECTS: There would be no direct effects to black-footed ferrets from implementation of the proposed stabilization projects.

INDIRECT EFFECTS: There will be a short term lack of forage for the prairie dogs, the main diet of the ferrets until the grasses, forbs and shrubs re-sprout and gain vigor. If the proposed weed treatments are successful, competition from weeds with native vegetation would be low resulting in better habitat quality in the long term.

Black-tailed Prairie Dog (*Cynomyns ludobicianus*)

The black-tailed prairie dog is not a threatened and endangered species or a candidate species. This friendly and furry mammal is mentioned in this assessment, because it is the preferred food source of the black-footed ferret. The black-tailed prairie dog lives in burrows in dry prairies with short grass. Their burrows have an entrance that is surrounded by a pile of dirt. The entrances to a prairie dog's burrow looks a little like a volcano. The mound of dirt protects the burrow from flooding and is a good place for the prairie dog to sit and watch for predators. The burrow entrance leads to a tunnel that goes down about three to ten feet and then straightens out to a horizontal tunnel that runs

about 10 to 15 feet. The burrow has a number of nesting chambers lined with grass. It also has a separate chamber used as a bathroom. When that chamber is full, the prairie dog will dig a new one.

The burned area on the reservation contained 47,982 acres of open grasslands over the 51,594 acres of trust land.

DIRECT EFFECTS: There will be no direct effects from implementation of the proposed stabilization projects.

INDIRECT EFFECTS: There will be a short term lack of forage for the prairie dogs, until the grasses, forbs and shrubs re-sprout and gain vigor. Rest from livestock grazing for two growing seasons as recommended would ensure a vigorous forage base for wildlife and livestock in the future. The proposed weed management treatments would also benefit the native plant communities in the burned area.

The impacts to wildlife following fire are mostly positive since fire can be a useful tool in creating diverse habitats. Natural and prescribed burning provides maintenance of native habitat for wildlife by shortening green-up time of forage and cover. These beneficial effects can be reduced by livestock grazing which does not allow for the burned plants to recover for a sufficient time to restore root growth and carbohydrate reserves. This can be especially important to large herbivores including elk. Implementation of the proposed weed control projects will help reduce competition with native species.

Greater Sage-Grouse *(Centrocercus urophasianus)*

The greater sage grouse is a candidate species on the TEPC list and is native to North America. The greater sage grouse is a large, ground-dwelling bird, measuring as much as 30 inches in length and two feet tall, and weighs two to seven pounds. It has a long, pointed tail, with legs feathered to the base on the toes and fleshy yellow combs over the eyes. Males are larger than females and sport a white ruff around their necks in addition to the typical mottled brown, black, and white plumage.

An adult male greater sage-grouse strutting.

Habitat & Range

The greater sage grouse is found at elevations ranging from 3,000 to 9,000 feet. It is an omnivore, eating mainly sagebrush, some other soft plants, and insects. One of the most interesting aspects of the greater sage-grouse is its nearly complete reliance on sagebrush. These birds cannot survive in areas where sagebrush does not exist.

The historic range of the greater sage-grouse included Washington, Oregon, California, Montana, Wyoming, Colorado, Utah, South Dakota, North Dakota, Kansas, Oklahoma,

Nebraska, New Mexico, Arizona, and the Canadian provinces of British Columbia, Alberta, and Saskatchewan. Greater sage grouse have apparently disappeared from Nebraska, Kansas, Oklahoma, New Mexico, Arizona, British Columbia, and Saskatchewan.

DIRECT EFFECTS: There would be no direct effects to greater sage-grouse from implementation of the proposed stabilization projects.

INDIRECT EFFECTS: There will be a short term lack of forage for the greater sage-grouse, since sagebrush is their main diet, until the grasses, forbs and shrubs re-sprout and gain vigor. If the proposed weed treatments are successful, competition from weeds with native vegetation would be low resulting in better habitat quality in the long term.

The BIA Regional Wildlife GIS data shows four greater sage-grouse leks that were located within or near the fire perimeter. Field reconnaissance of the two that fell within the fire perimeter determined that these areas will recover due to the low to moderate fire severity that occurred.

The greater sage-grouse was placed on the candidate list under the Endangered Species Act (ESA) on March 5, 2010. The USFWS felt that this species warrants the protection of the ESA but listing the species at this time is precluded by the need to address higher priority species first. This means the species would not receive statutory protection under the ESA and the Crow Tribe would continue to be responsible for managing the bird.

Sprague's Pipit – (*Anthus spragueii)*

The Sprague's Pipit is a candidate species on the TEPC list and is native to North America. The Sprague's Pipit is a relatively small passerine endemic to the North American grasslands. The Sprague's Pipit is a ground nester that breeds and winters on open grasslands. It feeds mostly on insects and spiders and some seeds.

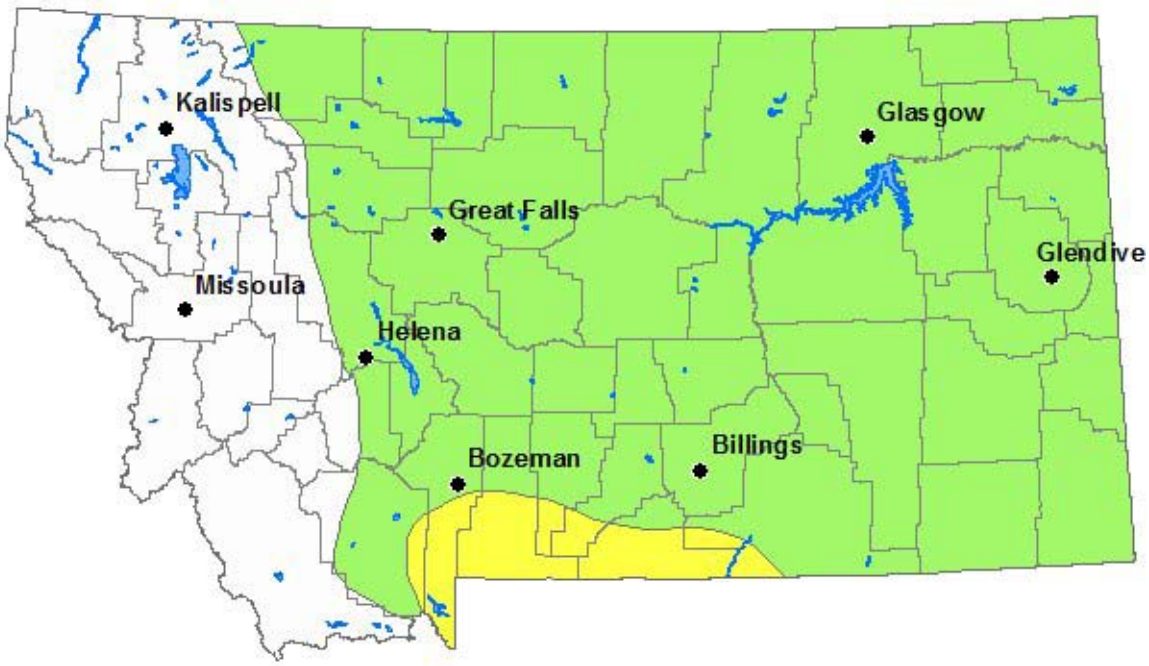
An adult male Sprague's Pipit.

The adult Sprague's Pipit is a pale, slender, sparrow-sized bird with white outer tail feathers, a thin bill, pale legs, and a heavily streaked back. Adults reach a length of 6.5 inches (16.5 cm), with a wingspan of 10 inches (25.4 cm), and a weight of 23.7 to 24.0 grams. The sexes are alike. The sides of the head and indistinct buffy eye-rings are pale. The lores contrast with dark brown eyes and the ear coverts are plain brownish-buff, usually with a slight reddish tinge. The crown, sides and rear of neck are buffy with sharply defined black streaks. The back is light sandy-brown with broad black streaks, with a paler more prominent buffy stripe down each side. The wings, 7.7 to 8.5 cm long, have blackish-brown feathers with whitish to buffy-brown edging, and two whitish wing bars. The rump and upper tail coverts, paler than the back, are sandy-brown with narrow black streaks. The blackish-brown feathers of the tail have buffy edging and the outer two pairs of feathers are white. The breast is a bright dark buff with a necklace of narrow black streaks. The flanks are brownish-buff and without streaks. The legs of the adults

are pale brown, flesh or yellowish-brown, while they are pinkish in the juveniles (Godfrey 1966, Maher 1979, King 1981, Robbins and Dale 1999).

The Sprague's Pipit is closely tied with native prairie habitat and breeds in the north-central United States in Minnesota, Montana, North Dakota and South Dakota as well as south-central Canada. Wintering occurs in the southern States of Arizona, Texas, Oklahoma, Arkansas, Mississippi, Louisiana, and New Mexico.

Habitat & Range



The Sprague's Pipit arrives in Montana in early May and breeds shortly thereafter. Records indicate eggs are present in May at Bowdoin National Wildlife Refuge (Lenard et al. 2003). Fall migration begins at the end of August. Few records exist for the species in Montana outside of the May to August time period. The extreme migration dates for the species are April (Roosevelt County) and October (Stillwater County) and are represented by only two records (Lenard et al. 2003).

An endemic grassland bird, the Sprague's Pipit prefers native, medium to intermediate height prairie (Casey 2000) and in a short grass prairie landscape, can often be found in areas with taller grasses (Samson and Knopf 1996). The Sprague's Pipit is significantly more abundant in native prairie than in exotic vegetation (Dechant et al. 2001). Dechant (2001) also notes that the species has been shown to be area sensitive, requiring relatively large areas of appropriate habitat; the minimum area requirement in a Saskatchewan study was 190 hectares (470 acres). This pipit is also known to utilize and breed in alkaline meadows and around the edges of alkaline lakes (Johnsgard 1986).

Biophysical Settings (Bps) Associated with this Species

The East Sarpy Fire burned 24,140 acres of Great Plains Mixed-grass Prairie and 720 acres of the Great Plains Sand Prairie bps when using the 2010 Landfire Existing Vegetation Type Layer (EVT). For further descriptions of the Great Plains Mixed-grass Prairie biophysical setting refer to the vegetation assessment. The description of the Great Plains Sand Prairie BpS is included below.

Biophysical Site Description

This BpS would be found in NRCS's sand type or the Sandy Ecological site description. Occurs around sandstone outcrops and has a lower productivity on these sandy sites versus the mixed-grass prairie sites.

Vegetation Description

Dominant vegetation includes prairie sandreed *(Calamovilfa longifolia)*, little bluestem *(Schizachyrium scoparium)*, blue grama *(Bouteloua gracilis)*, needle-and-thread *(Stipa comata)*, sand dropseed *(Sporobolus cryptandrus)*. Shrubs seen may include horizontal juniper *(Juniperus horizontalis)*, silver sagebrush *(Artemisia cana)*, and skunkbrush *(Rhus trilobata)*.

Geographic Range

Predominantly occurring in the eastern portion of Map Zone 20 (MZ20). Also found in scattered pockets elsewhere through out the zone. It probably occurs on the Charles Russel National Wildlife Refuge. In 331Kf, this might occur. In MZs 29 and 30, more of this type than in MZ20 because more sandstone and sandy soils. Occurs around Broadus and Ekalaka. Medicine Rocks State Park almost all sand prairie. 331Kf, in 331Gf, d. Occurs in Little Missouri Grasslands in Dakotas.

It's uncommon to find Wyoming big sagebrush, and when you do - it's usually Wyoming big sagebrush with bluebunch wheatgrass or needle-and-thread, that you'd find on a sandy soil. The sagebrush in this type is usually silver sagebrush. It would be unusual to have more than 10-15% shrub cover except in the case of *(Juniperus horizontalis)*, where cover can go up to 80% or more.

Disturbance Description

Fire, grazing and drought were the primary disturbances. Disturbances were cyclic with the earliest and latest seral stages fluctuating widely in accordance with changes in climate. The principal large grazer of the system was most likely bison which, when occurring in large numbers, would have locally disturbed large areas due both to grazing impact and physical disturbances such as trampling and wallowing. Grazing impacts are more pronounced near water and removed from steep, rough terrain. Overall the whole system would have been frequently impacted by large ungulate grazers.
Prairie dogs might have been a very minor component of the system. Where they occurred, prairie dogs grazed vegetation close to the ground which provided a local firebreak. It is questionable, however, as to whether prairie dogs prefer sandy soil and actually occurred here. It is thought that prairie dogs would not occur on these sandy sites and rather they usually occur on fine textured soils.

Fire was a frequent and widespread occurrence. The most extensive fires are likely to have occurred in years with wet springs followed by hot, dry summers when grazing pressure was low. Wet springs would have resulted in more productive and more continuous plant cover (ie, fuel) that would have supported and expanded fires ignited under dry conditions occurring later in the season. In addition, litter accumulation over several fire-free years would also have supported widespread fire, in any conditions. The litter component, a determining factor in fire size and frequency, is correlated with seral stage. Three to five fire free years produce enough litter to carry another fire. Post-fire shifts in species composition depend on the timing and condition of fire. It is also speculated that native burning might have been an influence in this BpS. Extended periods of severe drought is likely to have affected both species composition and the

stability of the sandy soil, particularly when compounded by wind and heavy grazing. Droughts could affect the entire region.

DIRECT EFFECTS: There would be no direct effects to the Sprague's Pipit from implementation of the proposed stabilization projects.

INDIRECT EFFECTS: The impacts to wildlife following fire are mostly positive since fire can be a useful tool in creating diverse habitats

The U.S. Fish and Wildlife Service reviewed the conservation status of Sprague's Pipit to determine whether the species warrants protection under the ESA. The status review found that listing Sprague's Pipit as threatened or endangered is warranted, but that listing the species at this time is precluded by the need to complete other listing actions of a higher priority. To ensure this review was comprehensive, the Service solicited information from state and federal natural resource agencies and all interested parties regarding the Sprague's pipit and its habitat.

Migratory Birds

The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, and transportation, (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. While the MBTA has no provision for allowing unauthorized take, the USFWS realizes that some birds may be killed during implementation of fire management activities, even if all known reasonable and effective measures to protect birds are used. The USFWS Law Enforcement Office carries out its mission to protect migratory birds through investigations and enforcement, as well as by fostering relationships with individuals, companies, and industries that have taken effective steps to avoid take of migratory birds and by encouraging others to implement measures to avoid take of migratory birds. It is not possible to absolve individuals, companies, or agencies from liability even if they implement bird mortality avoidance or other similar protective measures. However, the Office of Law Enforcement focuses its resources on investigating and prosecuting individuals and companies that take migratory birds without identifying and implementing all reasonable, prudent and effective measures to avoid that take. Agencies are encouraged to work closely with Service biologists to identify available protective measures when developing project plans, and to implement those measures prior to/during construction or similar activities.

Executive Order 13186, expressly requires that Federal agencies evaluate the effects of proposed actions on migratory birds (including eagles) pursuant to NEPA "or other established environmental review process" restore and enhance the habitat of migratory birds, as practicable; identify where unintentional take reasonably attributable to agency actions has, or is likely to have, a measurable negative effect on migratory bird populations; and, with respect to those actions so identified, the agency shall develop and use principles, standards, and practices that will lessen the amount of unintentional take, developing any such conservation efforts in cooperation with the Service.

To the maximum extent practicable, project construction should be scheduled so as not to disrupt nesting raptors or other migratory birds during the breeding season. We recommend a 0.5-mile buffer between occupied nests and construction activities during the breeding season for most raptor species. If work is proposed to take place during the breeding season or at any other time which may result in take of migratory birds, their eggs, or active nests, the Service recommends that the project proponent take all practicable measures to avoid and minimize take, such as maintaining adequate buffers, to protect the birds until the young have fledged. Active nests may not be removed. The Service further recommends that if field surveys for nesting birds are conducted with the intent of avoiding take during construction, any documentation of the presence of

migratory birds, eggs, and active nests, along with information regarding the qualifications of the biologist(s) performing the surveys, and any avoidance measures implemented at the project site be maintained.

Bald and Golden Eagles

The Bald and Golden Eagle Protection Act (BGEPA) prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald or golden eagles, including their parts, nests, or eggs. The BGEPA provides criminal and civil penalties for persons who take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof. The BGEPA defines take as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. "Disturb" means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagles return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

A permit is required for any legal take of bald or golden eagles or their nests (whether occupied or unoccupied). Limited issuance of permits to take bald and golden eagles can be authorized ''for the protection of . . .other interests in any particular locality'' where the take is compatible with the preservation of the bald eagle and the golden eagle, is associated with and not the purpose of an otherwise lawful activity, and cannot practicably be avoided. No one is required to seek a permit for any activity. However, where an activity results in take, it is a violation of BGEPA unless a permit authorizing that take has been obtained prior to the action.

Should work be proposed within 0.5 mile of an active eagle nest, we recommend that you comply with seasonal restrictions and distance buffers specified in the *2010 Montana Bald Eagle Management Guidelines: An Addendum to Montana Bald Eagle Management Plan (1994)* during construction. During the nesting season, especially early in the season, eagles can be very sensitive to disturbance near the nest site and may abandon the nest as a result of low-level disturbance, even from foot traffic.

IV. RECOMMENDATIONS

The black-footed ferret is the only threatened and endangered species thought to occur on the Crow Reservation. There are no current data documenting any black-footed ferret on the Crow Reservation and there are no prairie dog towns larger than 56 acres within the perimeter of any of the fires within the East Sarpy Fire.

Therefore, any proposed Emergency Stabilization and Rehabilitation Treatments will have "No Effect" to any Threatened and Endangered Species based on conversations with the Regional Wildlife Biologist, August 13, 2012.

Additional recommendations include:

Where applicable, install and maintain appropriate erosion control measures to reduce sediment transport to adjacent wetlands and stream channels;

Enact best management practices to avoid and minimize the spread of noxious weeds and other undesirable exotic plant species within the proposed project area, as well as to minimize spills of fuels and other hazardous materials;

Confine disturbed areas as narrow as possible in or near sensitive resources such as native prairie, sagebrush habitat, wooded draws, wetlands, streams, prairie dog towns, and grouse leks; and

Re-vegetate disturbed areas with appropriate native species obtained from local sources, as possible.

A. Emergency Stabilization – (Non Specification)

The BAER Team was dispatched to the East Sarpy Fire to assess the need for emergency stabilization treatments to minimize threats to life or property and stabilize and prevent unacceptable degradation to natural and cultural resources resulting from effects of fire. However, field observations within and downstream from the burned area do not indicate that emergency stabilization treatments specific to wildlife resources are warranted. Therefore, no specifications have been prepared to directly address wildlife or habitat affected by this wildfire.

B. Management Recommendation – (Non Specification)

Based on the conversations with USFWS Biologist, Jeff Berglund, management should avoid constructing new roads and permanent/temporary travel ways through prairie dog towns and sagebrush habitat where feasible. Any new dozer lines or temporary roads should be closed and rehabilitated so they are inaccessible to motorized vehicles.

General Effects to Fish

The area of concern related to fisheries includes Tullock and East Sarpy Creeks.. There will be no impact to the fish or their habitat from the proposed stabilization activities.

V. CONSULTATIONS

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BURNED AREA EMERGENCY STABILIZATION PLAN

East Sarpy Fire

WATERSHED RESOURCE ASSESSMENT

I. OBJECTIVES

- Assess overall soil and watershed changes caused by the fire, particularly those that pose substantial threats to human life and property, and critical natural and cultural resources. This includes evaluating changes to soil conditions, hydrologic function, and watershed response to precipitation events;
- Identify potential flood and erosion source areas and sediment deposition areas;
- Identify potential threats to life, property, and critical natural and cultural resources in relation to flooding, debris flows, erosion, sediment deposition;
- Develop soil burn severity map, watershed response maps, and watershed treatment maps;
- Develop treatment recommendations, if necessary;
- Identify future assessment or analysis needs;
- Identify future monitoring needs, if necessary;

II. ISSUES

Issues identified as possible post-fire watershed conditions that threaten life, property, and significant cultural and natural resources include:

- Increased erosion and sedimentation
- Loss of soil productivity

A. Background –

The purpose of the burned area assessment is to determine if the fire caused emergency watershed conditions and to identify potential values at risk from these conditions. Identification of values at risk occurs through consultation with individuals, state, tribal, federal agencies as well as through field investigations. Not all values initially identified are determined to be at risk. If emergency watershed conditions are found and values at risk are identified and confirmed, then the magnitude and scope of the emergency is mapped and described, values at risk to be protected are analyzed, and treatment prescriptions are developed to protect these values.

The most significant factor leading to emergency watershed conditions is loss of ground cover, which can lead to erosion and changes in hydrologic function in the form of decreased infiltration and increased runoff. Such conditions can lead to increased flooding, sedimentation and deterioration of soil conditions.

Climate

The weather and climate of the Sarpy Hills Complex Fire area is representative of a continental climate, with hot summers, cold winters, and extreme variability in both precipitation and temperature. Precipitation and temperature are greatly influenced by topography and elevation. Temperatures range from near 100^{o}F during the summer months to well below 0^{o}F in winter. Summer days are usually quite warm, but nights are typically cool. This summertime temperature pattern and the predominant regional updraft often cause convective storms to form, starting in late spring and continuing throughout the summer.

Average annual precipitation ranges from 14 to 16 inches for the Sarpy Hills Complex fire

area (WRCC, 2012). Approximately 50% of the annual precipitation occurs during May, June, and July, and almost 75% during the 5-month period between April and August, in the form of rain associated with high-intensity, short-duration storms. The smallest amounts of precipitation typically occur during the winter months, November through February, as snow.

The Sarpy Hills Complex has weather stations monitored through the Western Regional Climate Center. Two of the closest stations include Crow Agency, MT (Station #242112) and Busby, MT (Station #241297). Table 1 displays a summary of average monthly and annual precipitation amounts for these climate stations. The average annual snowfall for Crow Agency, MT is 41 inches and 51 inches for Busby, MT (WRCC, 2012).

Table 1. Average annual precipitation in inches.

Climate Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg. Annual Precipitation (inches)
Crow Agency, MT	0.76	0.68	1.08	1.67	2.39	2.38	1.05	0.96	1.53	1.25	0.87	0.76	15.40
Busby, MT	0.65	0.55	0.76	1.42	2.29	2.47	1.22	0.99	1.34	1.14	0.73	0.61	14.20

Soil

Soils are formed over time from weathered or deposited materials. The type of deposition and/or weathering of the parent geology influences many of the physical, chemical, and hydrologic characteristics of a soil. Among these properties are soil texture, which is the proportions of sand, silt, and clay; chemical content; bulk density; structure; and the kinds and amounts of rock fragments. Soil texture is given in the standard terms used by the U.S. Department of Agriculture, as defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. An appropriate modifier is added when the content of particles coarser than sand is 15 percent or more – for example, "gravelly."

Loam and silty clay loam dominate the fire area. These soil types are found to be relatively stable, though particularly susceptible to wind and runoff erosion in areas of moderate burn severity areas.

Watershed Response

Stream flow in the area is influenced by the amount and timing of precipitation. Snow thaw is common from the middle to the end of March. By the end of March, flows start to increase in the streams. In April, a sharp increase in flow is attributed to the combination of precipitation and melting of accumulated snow. Flows reach their maximum during May or June. Although precipitation is highest in June, streamflow does not increase proportionally due to the increased evapotranspiration of the forested stands.

The drainages in the Sarpy Hills Complex fire area are in a stream flow regime dominated by runoff resulting from both snowmelt and intense summer rain storms. Runoff from rapid snowmelt or rain-on-snowmelt can occasionally occur in the late spring months, especially after heavy, wet snows associated with April and May blizzards. Peak flows result from both rainfall and snowmelt but no studies have been conducted to determine the proportion or relative magnitude of peak flows resulting from snowmelt. Peak stream flows resulting from rainfall runoff account for the majority of the annual peaks observed in the area. Peak flows generally occur during the months of April, May,

or June, but can occur any month from March to September if significant thunderstorm activity occurs.

The potential for sediment deposition and increased runoff will vary depending on many factors, including flood discharge, stream gradient, floodplain width, and sediment supply. In a single flood, channel incision could occur in relatively steep narrow parts of watersheds, and deposition could occur in gentler, wider reaches downstream. A variety of potential channel changes could therefore occur after the fire, however these changes are expected to be minimal due to the low gradient of streams and low-angle slopes.

B. Reconnaissance Methodology and Results

The scope of this assessment focuses on the infrastructure within or immediately downstream from the burned area. The purpose of a burned area assessment is to determine if the fire caused emergency watershed conditions and if there are potential values at risk from these conditions. Identification of values at risk occurs through consultation with the individuals, tribe, State and federal agencies, and through field investigation. Not all values initially identified are determined to be at risk. When emergency watershed conditions are found, and the values at risk are confirmed, then the magnitude and scope of the emergency is mapped and described. Values at risk and resources to be protected are analyzed and treatment prescriptions are developed to protect those values at risk. The most significant factor leading to emergency watershed conditions is loss of ground cover, which leads to erosion and changes in hillslope hydrologic function in the form of decreased infiltration and increased runoff. Such conditions lead to increased flooding, sedimentation and deterioration of soil condition.

Burned area evaluations included:

- Identifying fire-caused changes in soil properties and hydrologic function;
- Determining spatial extent and strength of hydrophobic soil conditions;
- Determining post-fire infiltration rates;
- Verifying and modifying the Burned Area Reflectance Classification (BARC) image to create a soil burn severity map, and if appropriate a runoff potential map;
- Identifying sediment source areas and erosion potential;
- Determining current channel and culvert capacities;
- Identifying potential flood zones; and
- Identifying potential threats to human life, property, and critical natural and cultural resources (values at risk).

The Interagency BAER Team hydrologist conducted field investigations and aerial reconnaissance to review resource conditions after the fires. The main objectives of the field visits were to 1) evaluate soil burn severity and watershed response in order to identify potential flood and erosion source areas; 2) identify and inventory values at risk, 3) identify the physical and biological mechanisms that may create risks; 4) review channel morphology and riparian conditions; 5) inspect hillslope conditions; and 6) determine needs for emergency stabilization.

Soil Burn Severity

Soil burn severity mapping is intended to reflect the degree of effects caused by the fire to soil characteristics that affect soil health and hydrologic function, hence erosion rate, and runoff potential. It is not a map of vegetation consumption. In mapping soil burn severity, the team evaluated field-observable parameters such as the amount and condition of surface litter and duff remaining, soil aggregate stability, amount and condition of fine and very fine roots remaining, and surface infiltration rate (water repellency) (Table 1). Water repellency was evaluated by observing the length of time a water drop remained beaded on the soil. If water repellency was present, the depth and thickness of this water repellant layer was also measured. Ash and soil color may also indicate how intense the heat was and how long it remained at a given place (residence time). These parameters are compared to similar soils under unburned conditions to estimate the degree of change caused by the fire.

Table 1 -General Characteristics of the soil burn severity classes

Soil Burn Severity	Characteristics
Unburned to Very Low	Unburned islands within the fire perimeter, and areas where very low severity ground fire occurred. Vegetation canopy, ground cover, and soil characteristics are not altered significantly from pre-fire conditions.
Low	Shrub canopy and grasses may be scorched or consumed. Unburned and charred grass root crowns, grass thatch, and ponderosa pine needle litter are present at the surface. A moderate, thin water repellent layer, generally less than 0.25 inches, may be present at the ash-soil interface. The water repellent layer is discontinuous and may not be entirely fire-induced due to pre-fire drought conditions. In forested areas, light ground fire may have occurred but litter and duff remain largely intact and forest canopy is generally unaffected.
Moderate	In shrub and riparian areas, shrub canopy is consumed, with stobs and stems remaining. A moderate, thin water repellent layer may be present at the ash-soil interface, but is discontinuous. In forest areas, leaf litter and fine surface fuels may be consumed; conifer or hardwood canopy is scorched but not consumed and will soon become soil cover/mulch. Unburned patches between shrubs and trees are smaller but still present.
High	Generally areas where conifer or hardwood canopy cover was dense and pre-fire litter layers were deeper and more continuous (i.e. riparian areas). Some charred, but recognizable organic material may be present in or beneath a thick ash layer. Water repellency may be present in thicker layers starting at the ash-soil interface, but water infiltrates into the soil below this 0.25-0.50 inch layer.

While soil burn severity is not based primarily on fire effects to vegetation, the team used post-fire vegetative condition as one of the visual indicators in assessing soil burn severity. In some cases there may be complete consumption of vegetation by fire, with little effect on soil properties, such as in a shrub ecosystem. Denser vegetation, with a deeper litter and duff layer, results in longer heat residence time, hence more severe effects on soil properties. For example, deep ash after a fire usually indicates a deeper litter and duff layer prior to the fire, which generally supports longer residence times. This promotes loss of soil organic cover and organic matter which are important for erosion resistance, and the formation or exacerbation of water repellent layers at or near the soil surface. The results are increased potential for runoff and soil particle detachment and transport by water, wind, and gravity. This would be mapped as high soil burn severity.

Conversely, sparse or light pre-fire vegetation such as grasses or sparse shrubs usually have negligible litter layer and surface fuels and experience extremely rapid consumption and spread rates, with very little heat residence time at the soil surface. The result is very little alteration of soil organic matter and little or no change in soil structural stability. Water repellency may or may not be entirely fire-induced due to pre-fire drought conditions.

In between these extremes, the moderate class of soil burn severity is far more diverse in observed soil conditions and can include various vegetation types, ranging from forests to shrub communities. In the case of a forest, the litter layer may be largely consumed, but scorched needles and leaves remain in the canopy and will rapidly become mulch. This is important in re-establishing protective ground cover and soil organic matter. This factor can result in the classification of the area as moderate, rather than high. Generally, however, there will also be less destruction of soil organic matter, roots, and structure in an area mapped as moderate. In a shrub ecosystem, even where pre-fire canopy density was high, litter layer is generally thin, and while the shrub canopy may have been completely consumed by the fire, the soil structure, roots, and litter layer may remain intact beneath a thin ash layer. Above ground indicators such as size of unconsumed twigs remaining to help the team determine how long the heat may have persisted on the site. If only root staubs and large diameter twigs remain, it was likely a more intense fire

with longer heat residence time, and combined with other observations of soil conditions may result in a call of high soil burn severity.

Satellite image-derived maps called Burned Area Reflectance Classification (BARC) helps to map soil burn severity classes throughout the burned landscape. A BARC is a map of degree of post-fire changes in spectral reflectance. The BARC is created by comparing near infrared and shortwave infrared reflectance values and measuring the difference between pre-fire and post-fire satellite images (see http://www.fs.fed.us/eng/rsac/baer/barc.html for more information). Since vegetation condition is the primary factor affecting post-fire spectral response in remotely sensed images, the BARC must be adjusted to fit ground observations before it can accurately be referred to as a soil burn severity map. Field and aerial observations provided the data necessary to make adjustments to the BARC to create the map of soil burn severity classes.

Soil Erosion

Soil erosion potential following a fire is generally increased over pre-fire potential. This is largely due to loss of soil cover (forb, grass, leaf, and needle litter), surface horizon soil organic matter responsible for structural stability, and in some cases, increased water repellency at or near the soil surface. The amount of increase over pre-fire condition is related to the degree of soil changes.

Important factors in any erosion model that are most affected by fire are the same; the amount of effective soil cover, the inherent susceptibility to soil particle detachment by wind, water, or gravity (a function of soil texture and structural stability), and the surface infiltration rate. As discussed above, these characteristics vary by degree of soil burn severity, and an area of high soil burn severity can be expected to show a larger increase in sediment production than an area of low soil burn severity. It is important to understand pre-fire erosion behavior when assessing post-fire erosion, since some areas have water repellant surfaces and inherently high erosion potential even before the fire. Soils information from the NRCS Soil Data Mart and Soil Data Viewer were utilized.

C. Findings –

Soil Burn Severity

The general characteristics of the soil burn severity classes were described in Table 2. The soil burn severity for the Sarpy Hills Complex Fire consists of the following:

Table 2 -Summary of Soil Burn Severity within Fire Perimeter

Burn Severity Classification	Area (acres)	Area (% of total burned)
Unburned/Very Low	9,010	11.5%
Low	52,021	66.5%
Moderate	16,959	21.7%
High	250	0.3%
Total	**78,240**	

Post-fire flows are not anticipated to significantly higher than pre-fire flows due to:

1. the patchy mosaic of burn severity found throughout the fire;
2. predominantly low and moderate burn severity throughout the fire;
3. pine needle mulch layer already forming to protect soils and minimize runoff;
4. re-sprouting of grasses and forbs;
5. healthy floodplain and riparian function found in the Little White River valley.

“Prescribed fires with low to moderate burn severity rarely produce adverse hydrologic effects that land managers need to be concerned about” (Neary et. al 2005). Because so

much of the Sarpy Hills Complex was a mosaic of low to moderate burn severity, much like a prescribed fire would produce; post-fire flooding is not expected to be significantly increased over pre-fire conditions. Post wildfire floods from high burn severity areas can be a concern, particularly the timing of storm flows (response time) and magnitudes of flood peaks. Because intensely burned watersheds respond to rainfall faster, producing more "flash floods," they also may increase the number of runoff events. However, for the Sarpy Hills Complex the areas of high severity are small patches interspersed among areas of moderate and low burn severity. No watershed was identified that had a large portion of high burn severity. Thus areas that may generate some runoff will have to flow through adjacent areas of moderate and low burn severity, which essentially act as a buffer – filtering ash and sediment as well as slowing runoff and preventing rapid concentration of flow.

Throughout the fire area, vegetation recovery is largely dependent on climatic cycles. If normal winter precipitation occurs, vegetation recovery could be rapid, with forbs and grasses providing ground cover similar to that observed in unburned areas throughout the fire. Once sprouting vegetation begins to produce brushy crowns and a duff/litter layer, watershed response will be reduced further. By the second winter season, forbs, grasses, and re-established shrubs should provide sufficient cover to reduce any increase in watershed response to near pre-fire levels.

However, if winters are dry, vegetation recovery will be slow, and thus the establishment of ground cover and shrub communities will be slow, and watershed response will remain slightly elevated over pre-fire conditions. The recovery of some areas may be slowed than what past experience suggests, due to the extended drought and extensive wildfires in recent years.

A consequence of significant runoff, erosion, sediment and debris delivery is a short-term degradation of water quality as ash, sediment, and burned organic debris are delivered to streams and reservoirs within and downstream of burned areas. The impacts of this effect depend largely on the vegetative recovery times in combination with storm characteristics in the same time period.

IV. RECOMMENDATIONS

Based on the results of the above observations:

A. Emergency Stabilization

No recommendation under this category.

B. Management Recommendation – Rehabilitation – (Non Specification)

Defer grazing in the Sarpy Hills Complex Fire area until 2013

Monitor the recovery of the grasses within the burn, even in the low to moderate burn severity classes to ensure that the crust has stabilized. Manage the area to minimize use until it is determined that the soils have re-established pre-fire stability. Any activities that potentially break through the soil crust may cause irreversible damage and loss of a productive soil resource for many years.

Tommy Tee Reservoir may be especially susceptible to degradation of water quality and riparian environments from land use and grazing activity due to moderate soil burn severity, compacted soils from grazing, and steeper slopes delivering sediment to the riparian zone. This area in particular should be rested from grazing until vegetation has recovered.

VI. REFERENCES

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BURNED AREA EMERGENCY RESPONSE PLAN

2012 EAST SARPY FIRE

APPENDIX II **ENVIRONMENTAL COMPLIANCE**

- **Environmental Compliance Considerations and Documentation**
- **Environmental Compliance Consultation and Decision**
- **Exception Checklist for BIA Categorical Exclusion**

BURNED AREA EMERGENCY RESPONSE PLAN
EAST SARPY FIRE

A. FEDERAL ENVIRONMENTAL COMPLIANCE RESPONSIBILITIES

All projects proposed in the 2012 East Sarpy Burned Area Emergency Response (BAER) Plan that are prescribed, funded, or implemented by Federal agencies on the Crow Indian Reservation are subject to compliance with the *National Environmental Policy Act* (NEPA) in accordance with the guidelines provided by the *Council on Environmental Quality (CEQ) Regulations (40 CFR 1500-1508)*. This Appendix documents the Bureau of Indian Affairs (BIA) BAER Team considerations of NEPA compliance requirements for prescribed emergency stabilization, monitoring and rehabilitation actions described in this plan for 50,997 tribal trust acres affected by the East Sarpy Fire. Also considered in this plan are the proposed emergency stabilization and rehabilitation actions on 597 tribal trust acres that burned in the 2012 Chalky Fire. With respect to this Appendix, all treatments proposed for the East Sarpy and Chalky Fires' burned areas will be referred to as simply the East Sarpy Fire BAER Plan. For any proposed activities not addressed in this plan, the BIA must complete separate NEPA analyses and compliance documentation.

This plan has been developed by a BIA BAER Team, with assistance from Crow Agency BIA, Rocky Mountain Region BIA, and Crow Tribe.

Agency Specific Guidance: This NEPA documentation has been developed in accordance with the following agency specific guidelines.

- **Bureau of Indian Affairs:** Burned area emergency stabilization and monitoring actions proposed on Tribal Trust lands will comply with NEPA compliance guidelines contained in the Indian Affairs Manual (59 IAM Chapter 3) policy, requirements and responsibilities.

B. RELATED PLANS

The East Sarpy Fire BAER Plan was reviewed for consistency with relevant plans and policies related to Crow trust lands impacted by both fires. Below are brief descriptions of plans referenced in the development of the East Sarpy Fire BAER Plan.

Forest Management Plan Crow Indian Reservation, 2009-2024

The Forest Management Plan provides guidance and direction on resource management activities on the Crow Indian Reservation for the period 2009-2024. The Forest Management Plan identifies goals and objectives for Crow forest lands and includes action plans for implementing resource protection and timber management. A companion document to this plan is the Bureau of Indian Affairs Crow Agency Fire Management Plan which is described below.

Bureau of Indian Affairs Crow Agency Fire Management Plan, 2010-2024

The purpose of the Wildland Fire Management Plan is to provide direction to the Crow Agency on implementation of its fire management program and related activities for the period 2010-2024. The Wildland Fire Management Plan also guides wildland fire operations and addresses management of unplanned and planned ignitions, and prevention, mitigation and education. General BAER guidelines and objectives are also discussed in the plan.

C. CUMULATIVE IMPACTS ANALYSIS

Cumulative effects are the environmental impacts resulting from the incremental impacts of a proposed action, when added to other past, present, and reasonably foreseeable future actions, both Federal and

non-federal. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The emergency stabilization treatments for the areas affected by the East Sarpy and Chalky Fires, as proposed in the East Sarpy Fire BAER Plan, do not result in an intensity of impact (i.e. major ground disturbance, etc.) that would cumulatively constitute a significant impact on the quality of the environment. The treatments are consistent with the above jurisdictional management plans and associated environmental compliance documents of the BIA, Crow Agency, Crow Tribe and the attached categorical exclusion.

No direct or indirect unavoidable adverse impacts to the biological or physical environment would result from the implementation of the East Sarpy Fire BAER Plan. The implementation of BAER and monitoring treatment actions proposed in the plan would not result in any adverse effect on the burned area or areas downstream. Conversely, implementation of the plan would be expected to result in a cumulatively beneficial response based on BAER recovery efforts.

D. APPLICABLE AND RELEVANT CATEGORICAL EXCLUSIONS

The individual actions proposed in this plan are Categorically Excluded from further environmental analysis as provided for in the Department of Interior Manual Part 516 (Part 516 DM). All applicable and relevant Department of Interior and BIA Categorical Exclusions are listed below. Categorical Exclusion decisions were made with consideration given to the results of emergency consultations completed by the BAER Team and documented below.

Applicable Department of the Interior Categorical Exclusions

Part 516 DM 2 Appendix 1.6	Non-destructive data collection, inventory (including field, aerial and satellite surveying and mapping), study, research and monitoring activities.

Applicable Bureau of Indian Affairs Categorical Exclusions

Part 516 DM 10.5 H (6)	Approval of emergency and range rehabilitation plans when limited to environmental stabilization on less than 10,000 acres and not including approval of salvage sales of damaged timber.
Part 516 DM 10.5 M (1)	Data gathering activities such as inventories, soil and range surveys, timber cruising, geological, geophysical, archaeological, paleontological and cadastral surveys.
Part 516 DM 10.5 M (2)	Establishment of non-disturbance environmental quality monitoring programs and field monitoring stations including testing services.

E. APPLICABLE LAWS AND EXECUTIVE ORDERS

This section documents consideration given to the requirements of specific environmental laws in the development of the East Sarpy BAER Plan. Specific consultations initiated or completed during development and implementation of this plan are also documented. The following executive orders and legislative acts have been reviewed as they apply to the East Sarpy Fire BAER Plan.

National Historic Preservation Act (NHPA). Certain emergency stabilization treatments may have the potential to affect significant cultural resources and thereby require the federal agency to comply with NHPA and as promulgated under 36 CFR Part 800. To assist the

Crow Agency in meeting NHPA compliance, the Crow Tribal Historic Preservation Officer was notified and informed that a BIA BAER team was preparing a plan to address issues that were identified concerning potential post-fire risks to human life, property and important cultural and natural resources from the East Sarpy and Chalky Fires. A cultural resource assessment was conducted and it was determined that there were no proposed BAER treatments that would impact significant cultural resources, thus negating the need for formal consultation under Section 106 of the NHPA.

Executive Order 11988, Floodplain Management. No proposed treatments would occupy or modify floodplains and all proposed treatments are in compliance with this order.

Executive Order 11990, Protection of Wetlands. No proposed treatments would result in long-term impacts to or loss of wetlands and all proposed treatments are in compliance with this order.

Executive Order 12372, Intergovernmental Review. Coordination and consultation is ongoing with affected Tribes, Federal, and local agencies. A copy of the BAER plan will be disseminated to all affected parties.

Executive Order 12892, Federal actions to address Environmental Justice in Minority and Low-Income Populations. All Federal actions must address and identify, as appropriate, disproportionately high and adverse human health or low-income populations, and Indian Tribes in the United States, The BAER Team has determined that the actions proposed in this plan will result in no adverse human health or environmental effects for minority or low-income populations and Indian Tribes.

Endangered Species Act. The BAER Team has consulted with US Fish and Wildlife Service Biologists regarding actions proposed in this plan and potential effects on federally listed species and has determined that there is No Effect on threatened and endangered species.

Clean Water Act. All proposed treatments are in compliance with this Act. Restoration and emergency stabilization measures proposed are necessary to maintain clean water within the burn and adjacent areas. Long-term impacts are considered beneficial to water quality.

Clean Air Act. Federal Ambient Air Quality Primary and Secondary Standards are provided by the National Ambient Air Quality Standards, as established by the U.S. Environmental Protection agency (EPA) (Clean Air Act, 42 U.S.C. 7470, et seq., as amended). The BAER Team has determined that treatments prescribed in the East Sarpy BAER Plan will have short-term minor impacts to air quality due to equipment emissions and/or increase in particulates during ground-based activities, but they that would not differ significantly from routine land use practices for the area. As such, all proposed treatments are in compliance with this Act.

F. CONSULTATIONS

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Wilford BirdinGround, Land Services, Crow Agency, Bureau of Indian Affairs
Caleb Cain, Rocky Mountain Regional Forester, Bureau of Indian Affairs

G. SUMMARY OF COMPLIANCE DOCUMENTATION

The following table summarizes the NEPA compliance in place for the BAER Emergency Stabilization (ES) and Burned Area Rehabilitation (BAR) treatments proposed for the East Sarpy Fire BAER Plan for the Crow Indian Reservation.

Treatment or Action	NEPA documentation (EIS, EA, or Cat Ex)	Reference to Assessment	Findings of Significance
ES-BAER Plan Preparation	Part 516 DM 10.5 H (6)	N/A	N/A
ES-Implementation Leader	Part 516 DM 10.5 H (6)	N/A	N/A
ES-Invasive Species Monitoring	Part 516 DM 10.5 M (1), M(2) Part 516 DM 2 Appendix 1.6	Vegetation	No Significant Impact
ES-Invasive Species Treatment	Part 516 DM 10.5 H (6)	Vegetation	No Significant Impact
BAR-Reforestation	Part 516 DM 10.5 H (6)	Vegetation	No Significant Impact

H. STATEMENT OF COMPLIANCE

The CEQ Regulations at 40 CFR 1508.4 require agencies to consider whether fairly routine actions involve extraordinary circumstances that, per NEPA, trigger an agency to prepare additional assessment and consideration. If it is determined that any of the exemptions listed in 516 DM Appendix 2 apply to a proposed action, that action may not be categorically excluded, and an Environmental Assessment or an Environmental Impact Statement must be prepared. All treatments that are proposed as a Categorical Exclusion for the East Sarpy Fire BAER Plan have been compared against the list of extraordinary circumstances and were found not to trigger any exceptions.

I have reviewed the proposed treatments in the East Sarpy Fire BAER Plan in accordance with the criteria discussed above and have determined that the proposed actions qualify as BIA Categorical Exclusions and would not result in any significant effect on the environment. BAER Team specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act and other Federal, State and local environmental review requirements. As such, all treatments are approved for implementation.

Prepared by: Juliette Nabahe, East Sarpy Fire, Environmental Protection Specialist, BIA BAER Team

Approved: _____
Vianna Stewart, Superintendent, Crow Agency Date

EXCEPTION CHECKLIST FOR BIA CATEGORICAL EXCLUSIONS

Project: East Sarpy Fire Burned Area Emergency Response (BAER) Plan Date: 8/17/2012

Nature of Proposed Action: Approval and implementation of prescribed treatments in the East Sarpy Fire BAER Plan.

Part 516 DM 2 Appendix 1.6 Categorical Exclusions:

Non-destructive data collection, inventory (including field, aerial and satellite surveying and mapping), study, research and monitoring activities.

Part 516 DM 10.5 Categorical Exclusions:

H (6) Forestry

Approval of emergency forest and range rehabilitation plans when limited to environmental stabilization on less than 10,000 acres and not including approval of salvage sales of damaged timber.

M (1) Other

Data gathering activities such as inventories, soil and range surveys, timber cruising, geological, geophysical, archeological, paleontological and cadastral surveys.

M (2) Other

Establishment of non-disturbance environmental quality monitoring programs and field monitoring stations including testing services.

Evaluation of Exception to use of Categorical Exclusion

1.	This action would have significant adverse effects on public health or safety.	No ☒	Yes ☐
2.	This action would have an adverse effect on unique geographical features, such as wetland, wild or scenic rivers, refuges, floodplains, rivers placed on nationwide river inventory, or prime or unique farmlands.	No ☒	Yes ☐
3.	The action will have highly controversial environmental effects.	No ☒	Yes ☐
4.	The action will have highly uncertain environmental effects or involve unique or unknown environmental risks.	No ☒	Yes ☐
5.	This action will establish a precedent for future actions.	No ☒	Yes ☐
6.	This action is related to other actions with individually insignificant, but cumulatively significant environmental effects.	No ☒	Yes ☐

7.	This action will affect properties listed or eligible for listing in the National Register of Historic Places.	No ☒	Yes ☐
8.	This action will affect a species listed, or proposed to be listed as endangered or threatened.	No ☒	Yes ☐
9.	This action threatens to violate federal, state, local, or tribal law or requirements imposed for protection of the environment.	No ☒	Yes ☐
10.	This action will have a disproportionately high and adverse effect on low income or minority populations.	No ☒	Yes ☐
11.	This action will limit access to, and ceremonial use of Indian sacred sites on federal lands by Indian religious practitioners, or significantly adversely affect the physical integrity of such sacred sites.	No ☒	Yes ☐
12.	This action will contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area, or may promote the introduction growth, or expansion of the range of such species.	No ☒	Yes ☐

A "yes" to any of the above exceptions will require that an EA be prepared.

NEPA Action - - - CE **X** EA _____

Preparer's Name and Title: Juliette Nabahe, BIA BAER Team Environmental Protection Specialist

Regional Archeologist Concurrence with Item 7 _____

Concur: _____ Date: _____
Regional Director/Superintendent

Concur: _____ Date: _____
Regional Office/Agency Environmental Coordinator

BURNED AREA EMERGENCY RESPONSE PLAN

2012 EAST SARPY FIRE

APPENDIX III **PHOTO DOCUMENTATION**

- **FORESTRY / VEGETATION**
- **WILDLIFE RESOURCES**
- **WATERSHED / SOIL ISSUES**

Forestry_Vegetation Issues / Concerns

High mortality

Intact riparian area

Results of fuels and forest management treatments

Burn mosaic

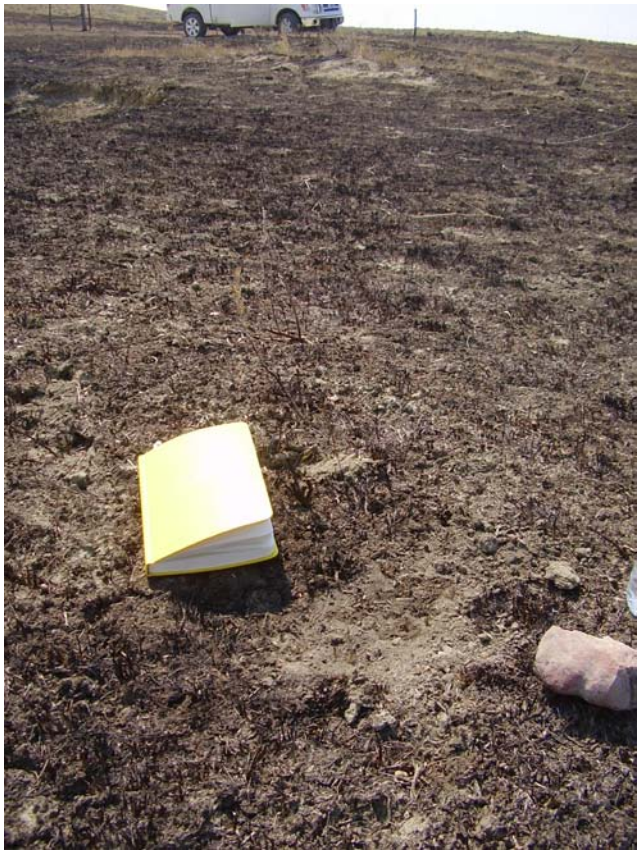
Wildlife Issues / Concerns

Active prairie dog home

Bull snake

Black bear

Sharp-tailed grouse



East Sarpy Fire. Examining low soil burn severity in grasslands.

East Sarpy Fire. High soil burn severity.

East Sarpy Fire.

East Sarpy Fire. Unburned or very low severity burn in riparian areas.

East Sarpy Fire. Moderately burned soils surrounding Tommy Tee Reservoir: Recommendation to defer grazing for one year.

BURNED AREA EMERGENCY RESPONSE PLAN

2012 EAST SARPY FIRE

APPENDIX IV **MAPS**

- **BURN SEVERITY MAP**
- **EMERGENCY STABILIZATION MAP**
- **REFORESTATION MAP**

11x17

Burn Severity

Map Insert

11x17

Emergency Stabilization

Map Insert

11x17

Reforestation

Map Insert

BURNED AREA EMERGENCY RESPONSE PLAN

2012 EAST SARPY FIRE

APPENDIX V SUPPORTING DOCUMENTATION

1. **Superintendent Request for BAER Team**
2. **Delegation of Authority**
3. **BAER Roster**
4. **BAER Team Organizational Chart**
5. **BAER Job Hazard Analysis**
6. **Forestry_Veg Cost Risk Analysis**
7. **East Sarpy_Closeout**
8. **Transmittal Memo**

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Crow Indian Agency
Box 69
Crow Agency, Montana 59022

IN REPLY REFER TO:
Office of the Superintendent
Code 100

AUG - 7 2012

MEMORANDUM

TO: Edward Parisian, Director, Rocky Mountain Region

FROM: Vianna Stewart, Superintendent Vianna Stewart

SUBJECT: Request for Burned Area Emergency Response (BAER) Team for the 2012 Sarpy Fire Complex

Due to the size and the amount of damage the Sarpy Fire Complex Fire has potentially caused to the Crow Agency and Tribal Natural Resources, I am requesting the Rocky Mountain Region Burned Area Response (BAER) Team come to the Crow Reservation to evaluate, assess and report any potential needs for areas needing emergency stabilization and long term rehabilitation.

Your prompt attention to this request would be greatly appreciated.

If you have further questions on this matter, please contact my office at (406) 638-2827.

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Crow Indian Agency
Box 69
Crow Agency, Montana 59022

IN REPLY REFER TO:
Office of the Superintendent
Code 100

MEMORANDUM

To: Team Leader, Burned Area Emergency Response (BAER) Team

From: Crow Agency, Superintendent Vianna Stewart

Subject: East Sarpy BAER Team Delegation of Authority

You are hereby delegated authority and responsibility to assess post fire effects and produce a Burned Area Emergency Response (BAER) Plan outlining measures and standards necessary to mitigate fire damage resulting from the East Sarpy Fire. All BAER activities will be conducted within the framework of provisions contained within Part 620: Department of Interior Manual Chapter 3; Bureau of Indian Affairs policy and sound resource management practices. A National Environmental Policy Act (NEPA) document will be prepared as part of the BAER Pan.

Your primary responsibility is to organize and direct your assigned resources to establish cost effective measures to protect the resources of the Crow Indian Reservation from further damage and start the process of recovery. You are to work in cooperation with the Crow Tribe.

As a team leader, you are accountable to me and to the Rocky Mountain Regional Director, Edward Parisian. On any occasion that I am not immediately available, you can reach Debbie Scott or Bryce Rogers @ 406-638-2672 they have full authority to represent me.

US DEPT OF INTERIOR
BUREAU OF INDIAN AFFAIRS
BRANCH OF FIRE MANAGEMENT
NATIONAL INTERAGENCY FIRE CENTER

BURNED AREA EMERGENCY RESPONSE (BAER)

REQUEST TO INITIATE EMERGENCY STABILIZATION FUNDING

1. Date of Request	8/06/2012
2. Agency Name	Crow Agency, BIA
3. Agency Contact and Phone number	Vianna Stewart (406) 638-2827 Daniel Rasmussen (406) 696-5061
4. Fire Name	East Sarpy Fire
5. Fire Code	G4FT
6. Project duration (years)	3 year
7. Request for funds (Dollars) **NOTE: On the next page, list proposed treatments and estimated cost of each**	Emergency Stabilization (92320) $ 30,000
8. Total estimated cost of ES Project **NOTE: On the next page, list proposed treatments and estimated cost of each**	Emergency Stabilization (92320) $ 30,000
9. Reviewed/Approved By: (Agency Signature)	Vianna Stewart
10. Reviewed/Approved By: (Regional Office Signature)	
11. Reviewed/Approved By: (NIFC Signature)	

APPROVAL LEVELS: Superintendent up to $250,000, Regional Director $250,000 to $500,000, BIA-NIFC over $500,000.

Form Version: 2011

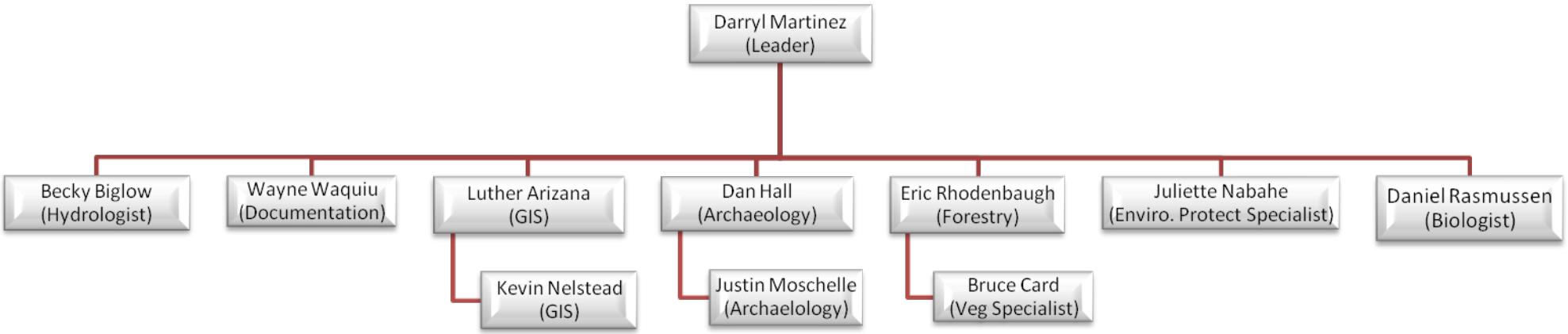
2012 BURNED AREA EMERGENCY RESPONSE (BAER) TEAM
EAST SARPY FIRE

POSITION	NAME/ORGANIZATION/ (Unit Identifier) ADDRESS (GACC)	WORK PHONE	FAX	CELL/PAGE/ EMAIL
Team Leader BAEL	***Darryl Martinez*** /BIA NIFC (NMSWC) 1001 IndianSchoolRd.NW,Albuquerque, NM 87104 (SW)	505-563-3369	505-563-3052	505-331-3514c darryl.martinez@bia.gov
Forestry / Veg BAFO	***Eric Rhodenbaugh***/BIA Wind River Agency (WYWRA) PO Box 158, Fort Washakie, WY 82514 (RM)	307-332-3719	307-332-7317	307-349-2300c Eric.rhodenbaugh@bia.gov
BABO	***Bruce Card*** P.O.Box 158, Fort Washakie, W.Y. 82514 (RM)			307-251-9920 c
Hydrologist BAHY	***Becky Biglow***/ Pike - San Isabel National Forest_Salida 550 E. 3rd St. Salida, CO 81201	719-239-9716		541-337-5582 c becbiglow@gmail.com
Cultural Resources BACS	***Dan Hall*** /BIA Pacific Region (CASAA) 2800 Cottage Way, Sacramento, CA 95825 (NO)	916-978-6041	916-978-6055	916-803-3840 c dan.hall@bia.gov
BACS	***Justin Moschelle*** / BIA Rocky Mountain Region 316 N 26th Street, Billings, MT 59101 (RM)	406-247-7911		406-529-1616 c justin.moschelle@bia.gov
Cultural Resources BADO	***Wayne Waquiu*** /BIA Albuquerque AO (NMABA) PO Box 26567, Albuquerque, NM 87125-6567 (SW)	505-563-3380	505-563-3052	505-259-6483c wayne.waquiu@bia.gov
Geo. Info Sys. Spec. GISS	***Luther Arizana***/BIA NIFC (IDFCA) 3833 S. Development Ave, Boise, ID 83705 (EB)	208-387-5377	208-433-6543	208-861-7783c luther.arizana@bia.gov
GISS	***Kevin Nelstead*** / BIA Rocky Mountain Region 316 N 26th Street, Billings, MT 59101 (RM)	406-247-7949		406-281-1395 kevin.nelstead@bia.gov
Env. Prot. Spec. BAEN	***Juliette Nabahe***/ BIA Fort Apache (AZFTA) PO Box 560, Whiteriver, AZ 85941 (SW)	928-338-5356	928-338-5383	928-205-9460 juliette.nabahe@bia.gov
Wildlife Biologist BABI	***Daniel Rasmussen*** /BIA Rocky Mountain Region 316 N 26th Street, Billings, MT 59101 (RM)	916-978-6041	916-978-6055	916-803-3840 c daniel.rasmussen@bia.gov

BURNED AREA EMERGENCY RESPONSE TEAM (BAER)

EAST SARPY FIRE

CROW AGENCY (BIA)



National Interagency Burned Area Emergency Response	1. WORK PROJECT/ACTIVITY BAER Assessments	2. LOCATION East Sarpy and Chalky Fires	3. UNIT DOI BAER Team
JOB HAZARD ANALYSIS (JHA)	4. NAME OF ANALYST Darryl Martinez	5. JOB TITLE BAER Team Leader	6. DATE PREPARED 8/11/2012

7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE
General Field work, monitoring	General personal safety	Bring your radio with charged battery Sign out;
		If going to a remote area alone let someone know specifically where you will be; Be sure someone knows you have returned.
	Sun and hyperthermia	Cover areas of exposed skin with proper personal protective clothing.
		Use sunscreen to prevent sunburn.
		Drink enough water to keep hydrated and prevent heat exhaustion or heat stroke (at least 2 quarts in summer).
		Pace yourself when climbing steep, open slopes.
	Hypothermia and cold	Carry extra clothes; wear layers to prevent sweating and subsequent cooling.
		Bring rain gear, hat, warm gloves with you everyday.
		Use extra caution in stream bottoms to prevent falling in water and hypothermia.
	Giardia / insects	Don't drink unfiltered or untreated water from creeks.
		Check yourself daily for ticks, especially hair.
		Tuck pants into boots, shirt into pants, wear long sleeves.
	Fatigue, carelessness	Get plenty of sleep at night; Be careful and do job right the first time, safely.
	Trip and fall, eye poking	Watch for down trees and debris on forest floor. Wear goggles when walking in thick, shrubby areas.
	Crossing creeks	Watch where you walk in stream, expect rocks to be slippery, don't cross if you feel unsafe.
		Cross facing upstream so knees don't buckle, use a stick for extra balance.
Field surveys, monitoring	Steep slopes, Remote worksites	Wear vibram soled shoes, with good ankle support. Carry a radio, leave itinerary.
Mapping/Inventory Within Fire Perimeter	Working within fire perimeter.	Wear PPE (Hard Hat, leather boots, NOMEX, fire shelter, goggles, and gloves) at all times. Recognize fires are not controlled. Know your 10 standard fire orders and "watch out" situations.
	Stump/root holes	Keep your eyes on path of travel. Stop your travel and complete task if your attention is diverted.

	Snags/Hazard trees	Size up your surroundings. Avoid work in areas where hazards exist. Be aware of expected conditions. Post a lookouts if the wind picks up.
	Slippery footings	Be aware in areas of wet ash, loose rocks, and unstable slopes.
	Rattle snakes	Be aware at all times.
Communication/Coordination with Team Leaders and Suppression Personnel	Personal Health and Safety	Take care of cuts, bruises, and blisters immediately. Report accident to Team Leader and complete accident report.
	Lightning	Check weather report, stay off ridge tops and open slopes during lightning storms
		If stuck in open keep radio and metallic objects away from you, squat down with only feet on ground using insulate pad if possible, keep as much of your body off the ground as possible.
	Falling rocks	Wear hardhat if in area with loose rocks; don't work directly above another person; be wary of rocks.
	Heavy brush	Wear long sleeve shirt; goggles
	Insect bites	Wear long sleeve shirt and hat; use repellent at your discretion.
		Carry anti-histamine and asthma-inhaler for bee stings. If known allergic carry proper medication and instruct coworkers in administration.
		Report your next day's work area to Team Leader by 1800 the previous day In order to be included in next day's shift plan.
		Be sure to check in with Division Sup.Group before entering and leaving fire perimeter.
Driving	Vehicle accidents and associated injury	Always wear safety belts and make sure everyone is buckled up! Drive carefully on heavily travelled roadways. Driving defensively means anticipating the other drivers actions before it happens. Back your vehicle in when parking and use a ground guide when available.
		Drive carefully in rain and mud, chain up BEFORE you get stuck. Don't attempt accessing remote areas in poor conditions
		Roads are narrow, drive defensively, giving yourself enough time/space to react to other drivers. Maintain stopping distance of half the distance you can see. Drive with headlights on.
		Stop and take a break if you feel sleepy while driving, or let someone else drive.
		If possible, remove hazards from roadbed rather than try to drive over or around them.

10. SIGNATURE	11. TITLE	12. DATE
Rebecca J Bigbee	Hydrologist	8/11/2012

East Sarpy Fire - B.A.E.R
Crow Agency Closeout — Aug. 17, 2012

Name	Email	Phone
Bryce Rogers	bryce.rogers@bia.gov	208-2035c (406)638-2247w
Oliver Half	ehalfecrownations.net	679-3432
Vianna Stewart	vianna.stewart@bia.gov	638-2827
Debbie Scott	debbie.scott@bia.gov	638-2672
Jan Kohn	crowfireinfo@gmail.com	638-2247

Department of the Interior
Bureau of Indian Affairs
Burned Area Emergency Response Team

August 18, 2012

Memorandum

To: Superintendent, Crow Agency, Bureau of Indian Affairs

From: Team Leader, Regional Burned Area Emergency Response (BAER) Team

Subject: East Sarpy Fire, August 2012 Burned Area Emergency Response Plan

The Burned Area Emergency Response Plan for the East Sarpy Complex has been completed and a draft will be available for your review on August 20, 2012.

The East Sarpy Fire was detected on July 31, 2012 and burned a total of 51,594 acres of Tribal Trust land, approximately 10 miles northeast of Crow Agency in Bighorn County, Montana on the Crow Indian Reservation (CIR).

The Crow Agency (Agency) and Crow Tribe (Tribe) recognized the potential for post fire effects and contacted the Rocky Mountain Regional Office on August 3, 2012 to request BAER assistance. After reconnaissance of the fire and consultations with the Tribe and Agency it was concluded that a Regional BAER Team would be assembled

Field assessments and plan preparation was done in close consultation with the US Fish & Wildlife Service, U.S. Geological Survey, Crow Historic Preservation Office, and Crow Tribe. Several of your staff from each agency as well as the Tribe assisted the team in field assessments and write-ups of observations.

You have approval authority to complete any suppression repair that has not already been completed in addition to any suppression impacts that may yet be found. Funds for repairing suppression impacts should come from the fire suppression account. The suppression account should be monitored for closure. That account should remain open until the entire suppression repair has been completed. That may require an administrative action on your part should the suppression impacts not be completed by the time the suppression account closes.

This combined Burned Area Emergency Response Plan requests funding through Emergency Stabilization (ES) funds to address the short-term non-suppression related emergency stabilization treatments. The Plan will also request funding through the competitive Department

of Interior Burned Area Rehabilitation (BAR) Program. The ES component of the Plan totals $68,459 and the BAR treatments total $67,158. The approval authority for those amounts will come from the Crow Agency. BIA National BAER Coordinator, Myron Hotinger, or I can assist with any questions.

Flash drives haves been given to the Agency and the Tribe that include the plan, maps, photos, closeout presentation, GIS maps, etc. Additional flash drives provided to the Agency and the Tribe contain the plan as a PDF file.

The procedures for approval of the BAER Plan to proceed with the recommended treatments and actions that need to be carried out immediately are as follows:

Action Items:

1. Time is of the essence in review and plan approval. The Bureau of Indian Affairs procedures provide for the approval of the plan by the Agency Superintendent for these plans since it is less than $250,000. Your contacts will be the Rocky Mountain Regional BAER Coordinator, Dan Rasmussen (406-696-5061), and the National BAER Coordinator, Myron Hotinger (208-387-5246).

   To expedite review, copies of the BAER Plan have been sent directly to the approval authority while your office completes its review. DOI guidelines call for a 6 business-day review/approval time period once they receive the document. The BAER Coordinator is aware of the plan. Once approval of the plan is given, and you receive a funding approval memorandum spending can be initiated. A signature approval page is provided at the front of the plan for the approval process.

2. An Implementation Leader needs to be identified, contracted, hired or appointed as soon as possible to initiate the implementation of emergency stabilization treatments. The Implementation Leader will oversee the treatments identified in these plans, allocate and coordinate funding, compile and consolidate unified supplemental requests, prepare annual and final accomplishment reports and is intended to coordinate implementation and reporting of treatments.

3. Funding for this plan will extend for up to three years following plan approval based on fire containment dates. The East Sarpy Complex was fully contained as of August 9, 2012. Emergency stabilization treatments must be installed within one year of fire containment. Rehabilitation treatments must be installed within three years of fire containment. Monitoring of installed treatments for effectiveness and maintenance of treatments may continue for up to three years following the containment date.

4. Environmental consultation has been initiated for all of the emergency stabilization treatments recommended in the plan. Any additional emergency stabilization treatments that may be identified must be reviewed for compliance purposes. Tribal Historic Preservation Office (THPO) and Native American consultation has been initiated by the BAER Team and should continue throughout the timeframe of the plan.

5. The BAER Plan was compiled with assistance from staff of the Crow Agency and the Crow Tribe. It was a pleasure to see the participation of your staff at our daily briefings, and close-out presentation. However, your staff should review the plan thoroughly and those who will be involved in its implementation should become very familiar with its contents. Plans should be distributed as soon as possible.

6. The BAER Team specialists have listed their phone numbers at the end of each of the assessments. Please feel free to contact any of us if you have questions about the plan, our thought process in developing our recommendations, or implementing the treatments. A copy of the plan will be sent to each of the BAER Team members for their use in referring to it when questions arise.

7. In order to fund additional treatments, a Supplemental Request must be made following the same review/approval procedures as the initial BAER Plan. Generally, all that is needed for a Supplemental Request is a letter, justifying the request for additional treatments and funding, and the Amendment Specification, documenting the costs of the activity to be funded. This should be prepared and submitted by the Implementation Leader through the proper channels. Supplemental requests can be made on an as needed basis. However, any supplemental funding requested for emergency stabilization treatments must be received and treatments installed within one year of the fire containment date. It is expected that supplemental requests will be made based on completing cultural resource assessments. The approval authority for supplemental requests will be through the National BIA BAER Coordinator, Myron Hotinger.

8. An Annual Accomplishment Report is due at the end of each fiscal year that is funded. The initial Accomplishment Report for FY12 will be due on September 15, 2012. Information in the Accomplishment Reports shall at minimum include:

    - The original specification and subsequent submissions,
    - Descriptions of the implementation of the treatments, including final treatment maps and specifications.
    - Expenditures.
    - Completion date of the treatment(s).
    - Projected follow-up activities and treatments.
    - Treatment effectiveness.

9. At the completion of the funding cycle (three years plus 90 days from fire containment date) a final Accomplishment Report will be due to the approval authority. The Final Accomplishment Report will be due on September 30, 2015. In addition to the information listed above, the Accomplishment Report will document the funding received, (initial and supplemental funding), specification accomplishment, the effectiveness of the installed treatments, the results of monitoring activities, and photo documentation.

Fifteen hard copies of the East Sarpy BAER Plan will be printed for distribution to the Tribe, Agency and the respective regional and national offices. BAER Team documentation including: time, unit logs, team briefing minutes, etc. have been compiled and you will receive a package.

On behalf of the BAER Team, let me say that it was our privilege to serve you, the Crow Agency, and the Crow Tribe, and this wonderful resource. I want to thank you and the Tribal Administrator for your availability to the team and your participation in various BAER Team activities. Should you have any questions about the plan or the related approval procedures please do not hesitate to call me.

Darryl Martinez
Regional BAER Team Leader
BIA – NIFC
Albuquerque, NM 87104
505-331-3514
darryl.martinez@bia.gov

copy: Cedric BlackEagle, Chairman, Crow Tribe
Myron Hotinger, National BAER Coordinator, BIA
Caleb Cain, Regional Forester, Rocky Mountain Region (RMR), BIA
Robert LaPlant, RMR Fire Management Officer, BIA
Dan Rasmussen, RMR BAER Coordinator, BIA


BAER
Burned Area Emergency Response