

**Appendices
Final Environmental Assessment
and
Resource Management Plan
Belle Fourche Reservoir**

June 2004



**U.S Department of the Interior
Bureau of Reclamation
Great Plains Region
Dakotas Area Office
Bismarck, North Dakota
Rapid City, South Dakota**





Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to tribes.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.



APPENDIX A

ISSUE STATEMENTS /GOALS AND OPPORTUNITIES

Issues and Concerns

These issues and concerns were developed through comments received from the public and internally by Reclamation.

Development

Provide some improved facilities.

Maintain the primitive character of the reservoir with limited development.

Balance development with primitive experience.

Implement any new developments in phases, rather than all at once.

Improvements at the reservoir could benefit the community.

Restrict any new improvements at the reservoir.

Irrigation Use

Irrigation is the primary purpose of the reservoir. Will recreation developments lead to conflicts with this use?

Is it worthwhile to invest a large amount of money in recreation improvements knowing that reservoir levels will fluctuate?

Improvements to the irrigation system will conserve more water in the reservoir.

Irrigators have a large financial investment in the irrigation project. The project is of great economic importance to the region.

Reclamation recognizes that future uses of the irrigation water and economic conditions may change for the District. In the event of such changes, Reclamation would be willing to work with the District to develop different operating systems to benefit other uses such as recreation.

Fees

Most people do not object to paying a fee for some improvements, however, there was concern that not all users could afford fees.

Keep fees low to allow for broad use.

Allow primitive camping to remain. Consider a one-time seasonal entrance fee with free camping.

If a fee system is enacted, it may be necessary to limit the number of entrances to the reservoir.

Road System

Many people are in favor of improvements to the road system and condition.

There is interest in a paved road to the boat ramp.

Some people feel that the road system is adequate or road improvements will lead to increased use or possible problems.

Unauthorized trails lead to damage of resources.

Law Enforcement

The majority of people are in favor of increased law enforcement or regulations to prevent littering, provide visitor safety, prevent underage drinking, regulate campsite occupation and prevent illegal activities.

Some felt that additional regulations are not needed.

Reclamation does not have law enforcement authority. Although we are currently contracting with Butte County Sheriffs's Office for law enforcement, they need comprehensive rules and regulations to enforce. This could be done either by creating new county rules and regulations, or adopting another agency's rules and regulations.

Sanitation/Litter

Litter clean up needs to be improved.

More restrooms and a recreational vehicle dump station are needed.

Volunteers could be used for litter clean up.

Garbage from the Belle Fourche Landfill blows onto the Reclamation parcel of land on the Belle Fourche River.

Recreation/Camping

Allow group camping.

Should a reservation and/or time limit system be used for camping?

Reservation systems can lead to monopolization of sites by a few people.

Reservations systems allow people to plan ahead.

Improve and/or add boat ramps. Provide a ramp on the east side of the reservoir to protect from winds.

Continue holding July 3 fireworks at reservoir.

Find a solution to jet ski users who are not courteous to other boaters.

Can these recreation improvements be provided? Day use area, electricity, water, concession, developed campground, designated campsites, fish cleaning station, State Park, better parking at boat ramp, horse riding area, showers, fire grates, marina, swimming area.

Without a managing partner, Reclamation can only provide basic recreation facilities.

The annual fireworks display creates litter (outside of the area cleaned up by the City of Belle Fourche after the fireworks) and potential health and safety problems.

Are there opportunities for using the artesian well near the dam for recreation and wildlife?

Establishment of new primitive campsites without planning can lead to resource damage.

Reservoir Access

The shoreline and reservoir should remain open to public use.

Access in some areas should be restricted to protect resources and other land uses such as livestock grazing.

Make shoreline and facilities accessible to the elderly and disabled.

Will the new Inlet Canal bridge and recent improvements to road crossings increase visitor use?

Land Uses

Should off-road vehicle use be restricted? If not restricted, should all off-road vehicles be licensed and registered?

Eliminate or reduce livestock grazing.

Continue or increase livestock grazing.

Assess the benefits of livestock grazing. (include Belle Fourche Diversion Dam lands).

Recreation is conflicting with livestock grazing and should be restricted in some areas.

Wildlife habitat should be improved.

Establish a walk-in wildlife area.

Preserve the scenic beauty of the reservoir.

Some of the grazing permit areas are difficult for permittees to access.

Is livestock grazing leading to any water pollution in the reservoir?

There is a need to compare the cost of administering the grazing permits vs. the revenue generated.

Reclamation does not have adequate staff to monitor grazing permit areas.

There is a need to periodically manage the reservoir grasslands to promote health of plants and prevent fires.

The five-strand fence around the reservoir prevents antelope movement.

What is the best way to manage the existing shelterbelts and food plots.

Any future developments need to be consistent with commitments made to the U.S. Fish and Wildlife Service regarding mitigation.

Can we provide a varied recreational experience by a combination of road and foot access areas?

Indian Trust Assets

Recognize potential impacts of Federal water projects on Native American reserved water rights.
Develop an effective Tribal consultation process.

General Resource Management

Increased developments will increase pressure on the fishery.

Erosion that occurs at the reservoir is primarily the result of natural wave action.

Tall grass is potential fire hazard. Restrict hunting and driving during extreme dry periods.

Do not adopt changes in land use that affect the water quality of the Belle Fourche River.

Increase public education about littering and regulations.

Maintain current relationships with managing partners.

The reservoir has important fossil and cultural resources that need to be protected (i.e. CCC Camp).

There is potential for interpretation of some of the historic resources.

Bank erosion is occurring from high water. This creates safety issues for recreationalists.

The "Little Deadwood" cabin site needs to be cleaned up. Is there potential for use of the area as a recreation site?

Without designated land use objectives and categories, it is currently difficult to make land use decisions at the reservoir.

Is there potential for additional wetland development at the reservoir? What about the warm water spring on Dry Creek?

More shoreline trees would provide shade for recreationalists and wildlife habitat.

There is a need to prevent and control noxious weeds.

Reclamation needs to clearly identify the boundary of the Belle Fourche Diversion Dam lands.

There is a need for a fire management plan.

Opportunities and Goals

These opportunities and goals were developed by the Working Group and Reclamation and are based on the issues and concerns in the previous section.

Development

Goal - Provide a balance of uses and development levels while striving to maintain the rural character and protect the natural resources of the reservoir.

- Create specific zones that accommodate different uses and resources such as open camping, walk in areas for wildlife, and a no-fee area.
- Identify and retain those areas around the reservoir that do not need change or improvement (“if it isn’t broke, don’t fix it”).
- Provide opportunities for commercial development.
- Explain and define priority allocations.

Fees

Goal - Develop equitable fee structure system for the reservoir.

- Charge a standard entrance fee to all users, base additional fees on level of use i.e. increased fee for developed campgrounds, charge daily fee only to day users rather than require them to pay annual fee.
- Consider having both fee and non-fee areas.
- Reduced rates for elderly users. Golden age passports?
- In State managed areas, fees may prevent them from using matching funds for O&M of recreation facilities.
- Entrance fees help to reduce conflicts among users (such as loud parties).
- Fee structure at Belle Fourche may increase use at Newell Lake.

Road System/Management

Goal - Develop a comprehensive road plan.

- Manage roads for different classes of vehicles depending on zoning.
- Gravel east side roads.
- Pave the road to Rocky Point on the west side or consider other methods of improvement such as dust abatement with “mag water”.
- Install better cattle guards.
- Stabilize reservoir banks or modify/close roads to avoid banks.

- Resolve potential conflicts between road use and livestock grazing.
- Develop a road plan with primary and secondary roads. Determine what standards will be used for road designs. Will they be based on federal highway standards for width etc.?
- Provide access to designated public use area
- Provide access to boat launching areas.
- Provide motorized and non-motorized trail opportunities. Review off-road vehicle use. regulation to ensure that any actions are consistent with regulation. Consider area by old spillway for this use.
- Construct fencing to manage road use.
- If road paving is not affordable, then any additional developments may not be practical.

Law Enforcement

Goal - Provide law enforcement for public safety and resource protection

- Manage the land with as little government presence signage as possible to allow a feeling of freedom to remain.
- Follow all required laws and regulations while realizing that some regulations may vary depending on zone. i.e. - a developed campground may require more regulations.
- Develop regulations that are specific to Belle Fourche Reservoir to allow for Federal, State, City, or County law enforcement.
- Increase public awareness of rules so they are not cited for rules they did not know existed.

Sanitation/Litter - Moved to Recreation/Camping and General Resource Management.

Recreation/Camping

Goal - Provide adequate land based recreation facilities to meet demand within the constraints represented by the reservoirs limited land area and natural resource management needs.

- Manage for day use, dispersed, primitive, group and developed camping. Consider the wants and needs of users.
- Provide day use area with developed facilities.
- Provide a disabled access fishing pier.
- Provide opportunities for winter recreation.
- Provide opportunities for good quality and safe swimming beach(s).
- Provide sanitary facilities and services that are consistent with specific land use zone.
- Build a fish cleaning station- find the most efficient design and provide water to station.

Goal - Provide for flat water recreational opportunities

- Build more boat docks- long ones!
- Build a breakwater to protect boats from winds.
- Resolve conflicts between different watercraft users if possible. Monitor use to determine if necessary in future, particularly when water levels go down, as conflicts may increase.
- Provide water access to boat launching.

Reservoir Access- Covered under Road System/Management and Recreation/Camping.

Land Uses

Goal - Manage riparian and other sensitive areas

- Target areas in the north, northwest and southwest parts of the reservoir.
- Develop water lanes for livestock. This could be difficult with fluctuating water levels and they may become navigational hazards.
- Fence reservoir edge.
- Modify grazing systems. Use grazing as a management tool.
- Stock water developments?
- Short duration, high intensity grazing.

Goal -Manage wildlife habitat and meet responsibilities related to the Fish and Wildlife Coordination Act.

- Protect and enhance sage grouse habitat.
- Establish a walk-in wildlife area.
- Will any mitigation be needed as result of RMP?
- If possible, resolve conflicts between target shooters and wildlife. Establish a rifle range? There could be problems with toxicity from lead at range.
- Previous wildlife mitigation areas need to be considered. Can this be transferred to another area?

Goal -Manage grasslands for plant diversity and vigor.

- Use livestock grazing as a tool.
- Use prescribed fire.
- Mowing near recreation sites.
- Conduct vegetation inventory and mapping (satellite, rare species, and noxious weeds).
- Develop Geographic Information System soil layer.

Goal - Improve Overall Reservoir aesthetics

- Plant trees and shrubs on shoreline, yet consider potential conflicts with natural character of reservoir.
- Plant trees in developed recreation areas for shade.
- Evaluate soils for suitability for tree/shrub planting. Consider native vs. non-native trees.

General Resource Management

Goal - Recognize and develop opportunities for cooperative management

- Consider SDGF&P, Butte County, city of Belle Fourche, other Federal agencies, District (possible assistance with O&M of improvements?)

Goal - Explore opportunities for improvements of fisheries management.

- Do the dam outlets need fish screens?

Goal - Work towards open communication on water management.

- Time water releases to enhance fish spawning.

Goal- Improve water quality.

Goal- Control soil and bank erosion when feasible in priority areas where erosion causes concern for water quality, safety and damage to capital improvements.

APPENDIX B

POSSIBLE MANAGEMENT ACTIONS

POSSIBLE MANAGEMENT ACTIONS FOR BELLE FOURCHE RMP ALTERNATIVES

Issue Categories	Actions							
Fees	No Fee	Annual Entrance Fee For Entire Reservoir	Annual Entrance Fee for Developed Area only	Daily Fee for Entire Reservoir	Daily Fee for Developed Area only	No Entrance Fee-Camping Fee only	Camping and Entrance Fee	Camping Fee for Developed Area only
Camping	All Sites Primitive, No Organized Sites	Group Sites	Developed Camping at Rocky Point only	Developed Camping at Rocky and Gaden's Points and Inlet Canal	Tent Camping Area	Back-country with walk-in, boat-in camping	Overflow Camping Area	Shoreline Camping which follows Drawdown
General Recreation	Day Use Area, Picnic Shelter	Managing Partner	Trap Shooting Area	Fishing Pier, Fish Cleaning Station	Swimming Beach	July 3 Fireworks	Parking Areas	Hiking/ Biking Trail
Road System	Pave Road from Highway 212 to Rocky Point	Pave Road from Highway 212 to Rocky and Gaden's Points	Road Closures/ Fencing	Gravel Roads	Widen	Identify Walk-in Areas	Improve Access to Desirable Sites	Obliterate Roads
Law Enforcement	Long-term Management Partner of Enforcement	Standardize Laws, Rules and Regulations for all Res. Lands	Public Education Program about Laws and Regulations	Signs				
Sanitation/ Litter	RV Dump Station	Garbage Cans/ Dumpsters	Recycling	Showers	Garbage Pick-up/ Litter Pick-up in High Use Areas	Water Supply	Fish Cleaning Station	Concession
General Resource Management Fisheries/ Water Quality	Structural Improvements	Time Releases of Water to Better Manage Fish Spawning	Fish Screens on Outlets	Monitor General Water Quality	Stabilize Banks on Gaden's Point and Other Locations			
Land Uses/ Riparian	Fence Diversion Dam Lands/ Create Travel Lanes for Cows	Fencing at Reservoir	Wetland Developments	Change Grazing Systems	Restrict Grazing	Develop Nesting Structures	Plant Shoreline Hardwoods (Cottonwood, Willow)	
Land Uses/ Wildlife	Bird Boxes	Manage and Develop Wildlife Habitat	Walk-in Wildlife Area	Protect Critical Habitat Areas- Riparian, Sagebrush, Shale Soils	Map and Manage Noxious Weeds/IPM	New Mitigation Area.	Additional Mitigation Based on New Developments.	Plant Shelterbelts
Land Uses/ Grasslands	Deferred Grazing System	Rest during Drought	Manage with Prescribed Burning	Identify and Manage for Plant Communities, Associations and Species (seral stages)	Manage with Grazing	Rest-rotational System in Cooperation with Adjacent Landowner	Fence Shoreline	Short Duration/ High Intensity Grazing

POSSIBLE ACTIONS FOR BELLE FOURCHE RMP ALTERNATIVES

Issue Categories	Actions									
Fees	Reduced Camping Fee for Primitive Area	Senior Citizen Discount	Annual or Daily Fee plus Fee for Either Developed or Primitive	Boat Ramp Fee	Residents vs. non-Resident Fees					
Camping	Shoreline Camping which follows Drawdown	Reservation System	Time Limits	No Camping						
General Recreation	Interpretation of Historic Sites	Tree Planting, Wildlife Viewing Opportunities, i.e. Blinds	Boat Ramps	Breakwaters	Winter Recreation	Off-road Vehicle Area	Horse Riding Facilities- Corral, Trails	Concession - Marina or Small Vendor		
Road System	Build Parking Lots	Improve Cattle Guards	Dust Abatement	Speed Limits	Drainage/ Culverts	Turn-outs	Signs			
Law Enforcement										
Sanitation/ Litter	Vault Toilets	Comfort Station	Remove Outdated Toilets	Public Education about Litter Cleanup						
General Resource Management Fisheries/ Water Quality										
Land Uses/ Riparian										
Land Uses/ Wildlife	Replant Food Plot Areas- Native Grasses?	Change Boundary Fence to Allow For Better Antelope Crossing	Remove Interior Fences	Water Developments						
Land Uses/ Grasslands	Water Developments	Terminate Leases after Current Adjacent Landowner no Longer Lease								

APPENDIX C

**COMPLIANCE WITH ENVIRONMENTAL LAWS AND
REGULATIONS**

Compliance with Environmental Laws and Regulations

The Proposed Action will comply with the following Federal and State environmental laws, regulations and directives:

- Antiquities Act of 1906
- 36 CFR Part 800 - Protection of Historic and Cultural Properties
- 36 CFR Part 60.4 - National Register Criteria
- Archeological and Historic Preservation Act of 1974
- Archaeological Resources Protection Act of 1979
- Archeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines
- American Indian Religious Freedom Act of 1978 (P.L. 95-341)
- Clean Air Act (33 USC 1251 et Esq.), Sections 401, 402, and 404
- Clean Water Act (P.L. 92-500, as amended, 33 U.S.C. 1344)
- Endangered Species Act of 1973 (PL. 93-205, as amended)
- Executive Order 11988 (Floodplain Management, 1977)
- Executive Order 11990 (Protection of Wetlands, 1977)
- Executive Order 12898 (Environmental Justice, 1994)
- Executive Order 13007 (Access to Sacred Sites, 1996)
- Federal Noxious Weed Act of 1974 (P.L. 93-629)
- Federal Water Project Recreation Act of 1965 (P.L. 89-72)
- Fish and Wildlife Coordination Act of August 14, 1946 (P.L. 732)
- Fish and Wildlife Coordination Act of 1958 (P.L. 85-624)
- National Historic Preservation Act of 1966 (P.L. 89-665), as amended (P.L. 95-515)
- National Environmental Policy Act of 1969 (P.L. 91-190)
- South Dakota Endangered and Threatened Species (SDCL 34-08)
- South Dakota State Burial Law (SDCL 34-27)
- Native American Graves Protection and Repatriation Act
- National Historic Preservation Act of 1966 (PL. 89-665), as amended though 1992 (PL.102-575)
- Reclamation Recreation Management Act of October 30, 1992 (P.L. 102-575)
- 36 CFR Part 800 - Protection of Historic and Cultural Properties
- 36 CFR Part 60.4 - National Register Criteria
- 43 CFR Part 7 - Protection of Archeological Resources: Uniform Regulations
- 43 CFR Part 10 - Native American Graves Protection and Repatriation Act Regulations

APPENDIX D

RECREATION USE ANALYSIS AND METHODS FOR DETERMINING NEEDED FACILITIES

Recreation Use Analysis and Methods for Determining Needed Facilities

This appendix is intended to provide a detailed explanation of the methods used to assess existing and future recreation use at Belle Fourche Reservoir. It is also an assessment of the infrastructure improvements that would be required to protect and maintain the resource under various management alternatives.

EXISTING USE

Data Collection

Field Observation

Reclamation performed an aerial photographic survey of the shoreline activity in July, 1999 over the July 4 holiday weekend. This provided a record of actual use and location of use on a peak holiday weekend day.

Reclamation also conducted ground observations of use at the reservoir. Personnel counted vehicles, recorded county of origin from license plates, recorded number of individuals per vehicle, and type of vehicle and any associated recreational craft (boats, motorcycles etc.). These observations were made both on peak and average weekends.

Visitors were noted from 25 states and 41 South Dakota counties. The majority of visitors came from South Dakota, primarily from Lawrence, Butte, Meade, and Pennington Counties. This information was used to designate the Recreation Market Area, discussed below. An average of three individuals per vehicle was calculated.

Traffic Counts

Traffic counters were placed on the west side of the reservoir in April, 1999. These counters recorded all traffic entering the west side of the reservoir and traffic entering the Gaden's Point Road. Table 1 shows this traffic counter data, along with other available visitation data.

Table 1. Belle Fourche Reservoir - Visitation Data

Year	Total	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan
1986 ¹	45,246												
1987 ¹	50,988												
1988 ¹	50,586												
1991 ¹	60,000												
2000 ²				9,752	14,330	21,480 (Rocky Point 17,184)	35,703 (Rocky Point 21,408) ³	13,623 (Rocky Point 9,870)	11,499 (Rocky Point 9,490)				
Additional use from east side and other dispersed recreation sites (+15%) ⁴					2,150	3,220	5,357	2,077	1,701				
Total Estimated Monthly Reservoir Recreation use					16,480	24,700	41,060	15,700	13,200				
Total Cumulative Summer Use					16,480	41,180	82,240	97,940	111,140				

- 1) Data for years 1986 to 1991 from traffic counters.
- 2) Visitation on the west side of the Reservoir (Rocky/Gaden's Point) based on available traffic counter data. Traffic count data has been adjusted to eliminate double counting incoming and outgoing vehicles and for short duration multiple trips by a single vehicle. Based on observation during the traffic count period, the average occupant load was estimated to be 3.0 persons per vehicle.
- 3) This includes July 1-July 5 visitation of 14,292 (8088 for Rocky Point)
- 4) Based on observation, dispersed camping and other use at areas not accounted for by the traffic counters is estimated to be 15% of total use.

Law Enforcement Statistics

The Butte County Sheriff's Department has been patrolling the reservoir area since 1999 under contract with Reclamation. In addition to recording citations and arrests, they provide a monthly estimate of visitor use, broken down into recreation categories such as day users and campers.

It is not possible to obtain a complete count of visitor use while conducting daily patrols. For this reason, the traffic counter data are considered the most reliable estimate of visitor use. However, the data collected by the Sheriff's Department are valuable in several ways.

These data were used to determine the "recreation mix", discussed under "Existing Recreation Mix". They were also used to determine the percentage of use that occurs during the week versus the weekend. It was calculated that 30 percent of use at the reservoir occurs during the week, and 70 percent occurs during the weekend.

Data Analysis

The data from the traffic counts was compared to other data. The total cumulative summer

use from Table 1 was rounded to 111,000. This number is referred to as the recreation days¹ (RD) per summer recreation season.

A daily use estimate rather than recreation days is typically used to determine facility needs. The standard measurement of use is the average summer weekend day (ASWD). The use for the average summer weekend day was estimated to be 1,800 persons at one time (PAOT)² or 600 groups at one time (GAOT)³.

The ASWD is determined as follows:

$$(TSU - PWU) / (SW - PSW) = RD/ASW$$

Where:

TSU	=	Total Summer Use (Estimated as shown on Table 1)
PWU	=	Peak Weekend Use (Memorial Day Week - 10,000 + July 4 Week - 14,000 + Labor Day - 10,000 for a total of 34,000 Peak week use)
SW	=	Number of Summer Weeks (Assume recreation season is Memorial Day to Labor plus a week or so on each end or 18 weeks)
PSW	=	Peak Summer Weeks 3 peak summer weeks
RD/ASW	=	Recreation Days/Average Summer Week

$$(111,000 - 34,000) / (18 - 3) = 5,133 \text{ RD/ASW}$$

The use in an average week has been determined to be 70 percent on the weekends and 30 percent during the week. The use on the average summer weekend day would then be 35 percent of the average summer week.

$$5133 \times .35 = 1,796 \text{ RD / ASWD, rounded to 1,800 RD / ASWD}$$

This basic estimate was tested by comparing data from the aerial photographic survey, observation by Reclamation, the Butte County Sheriff's Office, South Dakota Game Fish and Parks personnel, and by conversations in public meetings.

¹ A recreation day is defined as any part or all of a 24-hour day.

² Persons at one time on an average summer weekend day.

³ Observation during the traffic count indicated an average of 3 persons per vehicle.

Existing Recreation Mix

The types of recreational activities that people engage in at Belle Fourche Reservoir and the relative amount of participation in each type of use is known as the recreation mix. The recreation mix estimate is shown in Table 2.

Table 2. Recreation Mix Assessment

Year	Apr	May	June	July	Aug	Sept	Average	Adjusted Average
Day Use	68	68	549	820	201	131		
	20%	3%	21%	26%	19%	17%	18%	15%
Vehicles at Boat Ramp	124	628	566	739	239	238		
	36%	28%	22%	23%	23%	31%	27%	30%
Shore Fishing*	86	738	620	332	135	74		
	25%	33%	24%	11%	13%	10%	19%	25%
Camping Units	64	786	894	1267	474	330		
	19%	35%	34%	40%	45%	43%	36%	30%
Total Vehicles for the month	342	2220	2629	3158	1049	773		
							100%	100%
Total RD for the month	1026	6660	7887	9474	3147	2319		
Summer Cumulative		6660	14574	24048	27195	29514		

Recorded Use based on Butte County Sheriff's Department Patrol Records, random observations, 2000
 Hunters are also frequently observed at the reservoir from August to November yet counts were not made.

Recreation Market Area

The recreation market area (RMA) is the geographic area from where at least 80 percent of recreation users reside. The RMA is the area within an approximately 60 miles radius of the reservoir.

Future Recreation Use

It is assumed that the amount of use at Belle Fourche Reservoir is directly related to the population in the RMA. The forecast of future recreation use can be predicted by applying

the percent change in population forecast in the RMA as a percent change to the recreation visitation at the reservoir. As shown in Table 2, recreation use at the area would increase at a rate of slightly less than 5 percent every 5 years through 2020. This estimate should be updated as new census data becomes available.

Table 3. Population Projection for the RMA

County	Year 2000	Year 2005	Year 2010	Year 2015	Year 2020
Butte	8,911	9,320	9,410	9,461	9,498
Lawrence	24,178	25,931	28,005	30,151	32,278
Meade	25,768	27,403	29,163	30,875	34,124
Pennington	90,562	94,143	96,910	99,092	100,793
Total	151419	158802	165498	171594	178713
% change		0.04876	0.042166	0.036834	0.041487

Population Projections from: Business Research Bureau, University of South Dakota, School of Business, 414 East Clark Street, Vermillion, SD 57069. 1997.

RECREATION FACILITY REQUIREMENTS

Reservoir Recreation Facility Sizing Analysis

Recreation facilities would have to be planned and developed to accommodate recreation use and to protect the land and water resources. Determining the proper amount of recreational development requires combining use estimates, use projections, the recreation mix, and the facility types to calculate facility requirements. The type of infrastructure support, its location, level of refinement, and impact on future use would vary under each alternative. Tables 4- 7 illustrate the recreation mix, use level, and type of facility for each alternative.

Table 4: Alternative A (Existing Use)- No Action

Table 4. EXISTING USE - ALT. A No Action											
ASWD PAOT:		1800									
Group Size		3									
Activity :	% Use	% Breakdown Primary	% Breakdown Secondary	PAOT	GAOT	FACILITIES	2000	2005 5%	2010 5%	2015 5%	2020 5%
Camping (30%)	30.00%	16.75%									
Concentrated											
Rocky Point											
Single			6.00%	108	36	Undeveloped Site	36	38	40	42	44
Double			5.75%	103.5	17	Undeveloped Site	17	18	19	20	21
Group (3 + families)			5.00%	90	10	Undeveloped Site	10	11	11	12	12
Semi-Concentrated		10.00%									
Gadens Point vicinity											
Single			4.00%	72	24	Undeveloped Site	24	25	26	28	29
Double			3.50%	63	11	Undeveloped Site	11	11	12	12	13
Group (3 + families)			2.50%	45	5	Undeveloped Site	5	5	6	6	6
Dispersed		3.25%									
E Shore			2.00%	36	12	Undeveloped Site	12	13	13	14	15
S Shore			0.50%	9	3	Undeveloped Site	3	3	3	3	4
W Shore N. of Gadens			0.75%	13.5	5	Undeveloped Site	5	5	5	5	5
Boating	30.00%	30.00%									
Developed			19.00%	342	114	Parking at ramp	114	120	126	132	139
Dispersed			11.00%	198	66	dispersed launching Lanes (2)	66	69	73	76	80
Fishing - shore	25.00%	25.00%									
Inlet area			5.00%	90	30	Designated parking	30	32	33	35	36
Remaining shore			20.00%	360	120	Dispersed parking	120	126	132	139	146
Other Dayuse (5)	15.00%										
Concentrated		8.00%			2 x turnover						
Rocky - Gadens vicinity											
Single			5.00%	90	15	Undeveloped site	15	16	17	17	18
Double			1.50%	27	2	Undeveloped site	2	2	2	3	3
Group (5 + families)			1.50%	27	1	Undeveloped site	1	1	1	1	1
Dispersed		7.00%	7.00%	180	60	Dispersed parking	60	63	66	69	73
	100.00%	100.00%	100.00%	1800							
PAOT	Persons At One Time										
GAOT	Groups At One Time										

Table 5: Alternative B - Minimum Facilities

Table 5. Development Analysis Alt. B - Minimum Facilities											
(This spreadsheet displays capital improvement forecasts under a minimum facilities scenario)											
ASWD PAOT: 1800											
Group Size 3											
Activity :	% Use	% Breakdown Primary	% Breakdown Secondary	PAOT	GAOT	FACILITIES	2000	2005 5%	2010 5%	2015 5%	Projected 2020 5%
Camping (30%)	30.00%										
Semi-Primitive Developed Camping (1)		26.75%									
Rocky Point											
Single			10.00%	180	60	Semi-Primitive Sites	60	63	66	69	73
Double			9.25%	166.5	28	Semi-Primitive Sites	28	29	31	32	34
Group (3 + families)			7.50%	135	15	Semi-Primitive Sites	15	16	17	17	18
Designated Primitive Camping (2)		3.25%									
E Shore - S of Dam			1.50%	27	9	Designated Primitive	9	9	10	10	11
S Shore			1.00%	18	6	Designated Primitive	6	6	7	7	7
W Shore N. of Rocky Point			0.75%	13.5	5	Designated Primitive	5	5	5	5	5
Boating (3)	30.00%	30.00%									
Developed			24.00%	432	144	Parking at ramp	144	151	159	167	175
Dispersed			6.00%	108	36	dispersed launching Lanes (2)	36	38	40	42	44
Fishing - shore	25.00%	25.00%									
Inlet area (4)			5.00%	90	30	Designated parking	30	32	33	35	36
Remaining shore			20.00%	360	120	Dispersed parking	120	126	132	139	146
Other Dayuse (5)	15.00%										
Concentrated		8.00%									
Rocky - Gadens vicinity					2 x turnover						
Single			5.00%	90	15	Undeveloped site	15	16	17	17	18
Double			1.50%	27	2	Undeveloped site	2	2	2	3	3
Group (5 + families)			1.50%	27	1	Undeveloped site	1	1	1	1	1
Dispersed		7.00%	7.00%	126	42	Dispersed parking	42	44	46	49	51
PAOT	100.00%	100.00%	100.00%	1800							
GAOT											
Persons At One Time											
Groups At One Time											

Table 6: Alternative C - Multiple Use

Table 6. Development Analysis - Alt. C - Recreation Emphasis											
(This spreadsheet displays capital improvement forecasts under a multiple use facilities scenario)											
ASWD PAOT:		1800									
Group Size		3									
Activity :	% Use	% Breakdown Primary	% Breakdown Secondary	PAOT	GAOT	FACILITIES	2000	2005 5%	2010 5%	2015 5%	Projecte 2020 5%
Camping (30%)	30.00%										
Developed Camping (1)		22.00%									
Rocky Point											
Single			8.50%	153	51	Developed Sites	51	54	56	59	62
Double			7.50%	135	23	Developed Sites	23	24	25	26	27
Group (3 + families)			6.00%	108	12	Developed Sites	12	13	13	14	15
RV Camping at inlet area				60	20	Developed Sites					
Designated Primitive Camping (2)		8.00%									
E Shore			3.25%	58.5	20	Designated Primitive	20	20	21	23	24
S Shore			1.50%	27	9	Designated Primitive	9	9	10	10	11
W Shore N. of Gadens			3.25%	58.5	20	Designated Primitive	20	20	21	23	24
Boating (3)	30.00%	30.00%									
Developed			24.00%	432	144	Parking at ramp	144	151	159	167	175
Dispersed			6.00%	108	36	dispersed launching Lanes (2)	36	38	40	42	44
Fishing - shore	25.00%	25.00%									
Inlet area (4)			5.00%	90	30	Designated parking	30	32	33	35	36
Remaining shore			20.00%	360	120	Dispersed parking	120	126	132	139	146
Other Dayuse (5)	15.00%										
Concentrated		8.00%				2 x turnover					
Rocky - Gadens vicinity											
Single			5.00%	90	15	Developed Sites	15	16	17	17	18
Double			1.50%	27	2	Developed Sites	2	2	2	3	3
Group (5 + families)			1.50%	27	1	Group Shelter	1	1	1	1	1
Dispersed		7.00%	7.00%	126	42	Dispersed parking	42	44	46	49	51
	100.00%	100.00%	100.00%	1860							
PAOT	Persons At One Time										
GAOT	Groups At One Time										

Table 7: Alternative D - Conservation

Table 7. Development Analysis - Alt. D, Modified-Fish, Wildlife, and Recreation											
(This spreadsheet displays capital improvement forecasts under a conservation scenario)											
ASWD PAOT:		1800									
Group Size		3									
Activity :	% Use	% Breakdown Primary	% Breakdown Secondary	PAOT	GAOT	FACILITIES	2000	2005 5%	2010 5%	2015 5%	2020 5%
Camping (30%)	21.56%										
Developed Camping (1)		14.07%									
Rocky Point											
Single			9.38%	90	30	Developed Sites	30	32	33	35	36
Double			3.75%	60	20	Developed Sites	20	21	22	23	24
Group (3 + families)			0.94%	15	5	Developed Sites	5	5	6	6	6
Designated Primitive Camping (2)		7.49%									
E Shore			1.87%	30	10	Designated Primitive	10	11	11	12	12
S Shore			0.00%	0	0	Designated Primitive	0	0	0	0	0
W Shore N. of Gadens			5.62%	90	30	Designated Primitive	30	32	33	35	36
Boating (3)	30.00%	37.14%									
Developed			30.39%	486	162	Parking at ramp	162	170	179	188	197
Dispersed			6.75%	108	36	dispersed launching Lanes (2)	36	38	40	42	44
Fishing - shore	25.00%	25.00%									
Inlet area (4)			5.00%	90	30	Designated parking	30	32	33	35	36
Remaining shore			20.00%	360	120	Dispersed parking	120	126	132	139	146
Other Dayuse (5)	15.00%										
Concentrated		8.00%			2 x turnover						
Rocky Point											
Single			5.00%	90	15	Developed Sites	15	16	17	17	18
Double			1.50%	27	2	Developed Sites	2	2	2	3	3
Group (5 + families)			1.50%	27	1	Group Shelter	1	1	1	1	1
Dispersed		7.00%	7.00%	126	42	Dispersed parking	42	44	46	49	51
	91.56%	98.70%	98.70%	1599							
PAOT	Persons At One Time										
GAOT	Groups At One Time										

APPENDIX E

INTEGRATED PEST MANAGEMENT PLAN

**BELLE FOURCHE RESERVOIR
INTEGRATED PEST MANAGEMENT PLAN**

MANAGEMENT UNIT: Belle Fourche Reservoir

DATE: March 17, 2004

TABLE OF CONTENTS

BACKGROUND & PURPOSE	1
RESOURCE EVALUATION AND IDENTIFICATION OF PESTS	
Environmental Concerns.....	1
Pertinent Laws and Regulations	2
Identification of Pests	3
Objectives for Treatment	4
DOCUMENTATION AND MONITORING	5
Invasive Plants	5
SITE SPECIFIC PEST MANAGEMENT TECHNIQUES	
Land Use Types	7
Management Techniques	7
A. The Dam, upstream and downstream faces, and 50 feet from the toe slope	
1. Zones C, D and part of B	9
B. Aquatic and Riparian Areas and other areas of high runoff potential or flooding	
1. Emergent Vegetation	9
2. Perennial and Biennial Broadleaf Weeds	11
3. Woody Vegetation	17
C. Grasslands, Haylands and Rangelands	
1. Perennial and Biennial Broadleaf Weeds	19
2. Grasses	22
3. Invertebrates.....	25
D. Woodlands and Tree Plantings	
1. Perennial and Biennial Broadleaf Weeds	26
2. Vertebrates	28
E. Developed Recreation Areas, and Areas near Residential Developments	
1. Perennial and Biennial Broadleaf Weeds	28
2. Invertebrates.....	29
F. Maintenance and Storage Facilities	
1. Perennial and Biennial Broadleaf Weeds	29
2. Invertebrates.....	30
3. Vertebrates	30

Integrated Pest Management	31
D. Canada and Musk Thistles.....	32
E. Leafy Spurge.....	32
Reclamation Policy Change on Aerial Pesticide Applications	33
References	34

BACKGROUND & PURPOSE

The Belle Fourche project, located in western South Dakota, consists of a diversion dam, a storage dam and a system of canals, laterals and drains to irrigate 57,068 acres in Butte and Meade counties. Belle Fourche Dam (known also as Orman Dam) is an earthen dam, constructed by the Bureau of Reclamation on Owl Creek, an intermittent tributary of the Belle Fourche River, about 10 miles northwest of Belle Fourche. The reservoir covers 8,040 water surface acres at the top of the active conservation pool. The reservoir is filled by diverting water from the Belle Fourche River through the diversion dam and inlet canal. The remaining uplands, 6,653 acres, are managed cooperatively through interagency agreements with three managing partners. South Dakota Game, Fish and Parks (SDGF&P) manages two areas on the reservoir lands. The Parks and Recreation Division of SDGF&P manages 359 acres on Rocky Point for Recreation and the Wildlife Division of SDGF&P manages 164 acres below the dam. The Belle Fourche Irrigation District (Irrigation District) administers grazing permits on 3,301 acres and is responsible for vegetation and pest management on and around the dam and irrigation facilities. Reclamation is currently managing nearly 1,500 acres, 475 acres of grazing land that is not under permit and 1,020 acres, which were turned back by SDGF&P. A Resource Management Plan (RMP) is being developed for the reservoir and diversion dam lands.

Reclamation's Dakotas Area Office (DKAO) in Bismarck, North Dakota and Reclamation's Rapid City Field Office in South Dakota is responsible for resource management on Reclamation lands in the states of North Dakota and South Dakota. This responsibility includes controlling noxious weeds, non-native invasive plants and animals, invertebrate pests and other nuisance species causing property damage or posing a risk to public health or safety. Pest management programs on lands managed by agencies within the Department of the Interior are required to incorporate Integrated Pest Management (IPM) concepts and practices by Secretarial Order No. 3190, June 22, 1995 and the Departmental Manual, Public Land Series, Part 609, June 26, 1995.

This IPM plan was developed in cooperation with the Irrigation District, both divisions of SDGF&P and Butte County Weed Control Officer. It will provide guidance for techniques used to control weeds and other pests on lands being addressed in the Belle Fourche RMP. This plan will be reviewed at least every five years, but may be updated anytime as needed. A separate IPM plan will be developed for the canals, drains and other lands associated with the irrigation project.

RESOURCE EVALUATION AND IDENTIFICATION OF PESTS

Environmental Concerns

The following natural resources are of particular interest in implementing a pest management plan, especially concerning the selection and use of chemical control measures.

Lacustrine and Riverine Waters: Includes waters held behind the Belle Fourche Diversion Dam, diverted into Belle Fourche Reservoir and held behind Belle Fourche Dam, and released from the reservoir into Owl Creek, the irrigation canals and the Belle Fourche River. These waters provide habitat for fish and other aquatic organisms and are a source of water for wildlife, livestock, irrigation, and many other down-stream uses.

Palustrine Wetlands: Isolated wetlands located on lands above the flood pool elevation of reservoirs or in the right-of-ways of the canals and associated lands.

Wildlife Habitat: Native and planted woodlands and grasslands surrounding the reservoir and riparian areas along the Belle Fourche River, Crow Creek and other streams. A Wildlife Management Area has been established on 164 acres below the dam which is managed by the Wildlife Division of SDGF&P.

Recreation Areas: Picnic areas, campgrounds require additional care and timing to avoid incidental exposure of the public, especially children, to pesticides. SDGF&P Parks and Recreation manages 359 acres as Rocky Point Lakeside Use Area. This area has restrooms, a boat ramp and a parking area. Primitive camping is permitted at locations around the reservoir. The RMP is evaluating the need for additional recreational developments.

Forage Production: Currently, grazing permits are issued on 3,301 acres at the reservoir. These permits are administered by the Irrigation District. Grazing restrictions for pesticide applications must be observed within these areas. Grazing permittees will be notified of any applications which may affect their operations.

Adjacent Cropland: Crops on adjacent private lands may be adversely affected by drift from chemical applications and care will be taken to avoid spraying when weather conditions may cause drift.

Pertinent Laws and Regulations:

- **Federal Noxious Weed Act of 1974**
Regulates the import or interstate transport of noxious weeds identified as such by the Secretary of Agriculture and the management of undesirable plants on Federal lands.
- **National Environmental Policy Act of 1969, as amended**
Requires the full and honest disclosure of all environmental impacts associated with a proposed action prior to implementing the action.
- **Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended**
FIFRA is the basic law regulating pesticides in the United States. It covers pesticide regulation, labeling, use, applicator certification, disposal, transportation and research, as well as administrative and regulatory activities. It is illegal to apply pesticides out of compliance with the label instructions.
- **Clean Water Act of 1972, as amended**
The objective of this Act is to restore and maintain the chemical, physical and biological integrity of the Nation's waters. A 2001 court ruling has determined that following label instructions approved under FIFRA does not obviate the responsibility of an applicator to obtain a National Pollution Discharge Elimination System (NPDES) permit from the Environmental Protection Agency (EPA) prior to applying pesticides directly to waters of the United States. Pesticide applicators should contact well in advance the South Dakota

Department of Environment and Natural Resources for additional guidance when planning aquatic herbicide applications.

- **Clean Air Act of 1972, as amended**

Requires that any federal entity engaged in any activity resulting, or which may result, in the discharge of air pollutants, shall be subject to, and comply with, all Federal, State, interstate, and local requirements respecting the control and abatement of air pollution in the same manner, and to the same extent as any non-governmental entity.

- **Endangered Species Act (ESA) of 1973, as amended**

Requires consultation with U.S. Fish and Wildlife Service for federally listed threatened and endangered species identified as existing in the project area. Species documented in South Dakota, considered under the ESA, are as follows. Those marked with an asterisk have the potential to occur in the project area.

<u>Endangered</u>	<u>Threatened</u>
Black-footed Ferret (<i>Mustela nigripes</i>)	* Bald Eagle (<i>Haliaeetus leucocephalus</i>)
Grey Wolf (<i>Canis lupus</i>)	Piping Plover (<i>Charadrius melodus</i>)
*Whooping Cranes (<i>Grus americana</i>)	American Burying Beetle
Eskimo Curlew (<i>Numenius borealis</i>)	(<i>Nicrophorus americanus</i>)
Interior Least Tern (<i>Sterna antillarum</i>)	Western Prairie Fringed Orchid
Pallid Sturgeon (<i>Scaphirhynchus albus</i>)	(<i>Platanthera praeclara</i>)
Topeka Shiner (<i>Notropis topeka</i>)	
Scaleshell (<i>Leptodea leptodon</i>)	
	<u>Candidates</u>
	* Black-tailed Prairie Dog
	(<i>Cynomys ludovicianus</i>)

South Dakota has county bulletins indicating the occurrence of endangered species and voluntary pesticide use recommendations.

- **The Fish and Wildlife Coordination Act of 1934, as amended**

Requires equal consideration and coordination of wildlife conservation with other water resources development programs.

- **South Dakota Noxious Weed Law and Regulations**

Describes weeds which have been declared noxious by the agricultural commissioner, and state laws and regulations which pertain to controlling and preventing the spread of noxious weeds.

Identification of Pests

Plants: Perennial broadleaf weeds, annual weeds, and woody vegetation on the side slopes of the dam. South Dakota has declared seven noxious weeds in Chapter 38-22, Article 12:62:03 South Dakota's Noxious Weed Law and Regulations. Species of greatest

concern in the reservoir areas are identified with an asterisk (*). Other listed weeds will be controlled as needed.

South Dakota Noxious Weeds

- * Field Bindweed (*Convolvus arvensis*)
- * Leafy Spurge (*Euphorbia esula*)
- * Canada Thistle (*Cirsium arvense*)
Perennial Sowthistle (*Sonchus arvensis*)
- * Hoary Cress (*Cardaria draba*)
Russian Knapweed (*Centaurea repens*)
- * Purple Loosestrife (*Lythrum salicaria*)

Butte County Noxious Weeds

- * Common Burdock (*Arctium minus*)
- * Plumeless Thistle (*Carduus acanthoides*)
- * Musk Thistle (*Carduus nutans*)
Scotch Thistle (*Onopodum acanthoides*)
Puncturevine (*Tribulus terrestris*)

Other Invasive Plants Documented at Belle Fourche Reservoir

- * Salt Cedar (*Tamarix ramosissima*)
- * Japanese brome (*Bromis japonicus*)
- * Downy brome (*Bromus tectorum*)

Woody Vegetation - All woody vegetation will be controlled on the face of the dam. The following trees and shrubs are most frequently controlled.

- Russian Olive (*Elaeagnus angustifolia*)
- Cottonwood (*Populus spp.*)
- Willow (*Salix spp.*)
- Chinese Elm (*Ulmus pumila*)

Invertebrates:

- Grasshoppers
- Wasps
- Flies

Vertebrates:

- Beaver (*Castor canadensis*)
- Mice (*Mus musculus, Peromyscus sp.*)

Objectives for Treatment

- Control noxious and invasive weeds and prevent their establishment and spread on public and adjacent private lands.
- Maintain compliance with the State and local noxious weed laws.
- Eliminate competition of undesirable plants with native and/or planted vegetation

- Protect the structural integrity of the dam embankment from damage caused by intrusive root systems of trees and other woody vegetation.
- Control vegetation height on the crest of the dam for road maintenance and to prevent snow accumulation due to vegetation on the shoulders of the road.
- Prevent high invertebrate pest populations from damaging trees and other planted vegetation, including adjacent cropland.
- Control vertebrate and invertebrate pests as necessary to protect public health and safety, and to prevent damage to public and private property.

DOCUMENTATION AND MONITORING

Documentation and monitoring of noxious and invasive weed infestations are the only means of measuring the effectiveness of a weed control program. Without adequately documenting the location, size or extent, and efforts to control noxious weed infestations, it will be difficult to determine the results of treatments, or evaluate costs and benefits. Documentation will also aid in locating infestations for future treatments and monitoring. Current techniques will be monitored to effectiveness of a given treatment; whether it has eradicated or controlled the targeted pest. The frequency of site-specific monitoring will depend on the plant species, life history, and techniques selected for control. The following information should be documented for each noxious weed control site.

- SPECIES – Common names and/or scientific name, if known.
- DATE – The date the plant or infestation was first discovered at a particular site.
- LOCATION – Legal description of the site and a map or aerial photo locating the site of invasive weeds found on or near reservoir lands. Reclamation may be able to provide assistance in placing this information on a Geological Information System database using a Global Position System recorder.
- DESCRIPTION – A brief narrative describing the location of the site (include size and/or extent of the infestation).
- TREATMENTS – Initial and subsequent treatments used to eradicate or control invasive pests, include the date, time, application rates and type of biocontrol, if applicable.
- PHOTOS – Photos of the site would also be useful to document the effectiveness of treatments.

Invasive Plants

Other invasive weeds to watch for, which are causing problems in neighboring states or counties are listed below. Monitoring efforts should focus on these plants, as they are more likely to show up in the Belle Fourche area.. *Note: Additional plant species may be added to this list in subsequent years.*

- | | |
|--|---|
| • Diffuse Knapweed (<i>Centaurea diffusa</i>) | • Yellow Toadflax (<i>Linaria vulgaris</i>) |
| • Spotted Knapweed (<i>Centaurea masulosam</i>) | • Dalmatian Toadflax (<i>Linaria dalmatica</i>) |
| • Yellow Starthistle (<i>Centaurea solstitialis</i>) | • Eurasian Water-milfoil |
| • St. John's Wort (<i>Hypericum perforatum</i>) | • (<i>Myriophyllum spicatum</i>) |
| • Absinth Wormwood (<i>Artemisia absinthium</i>) | |

The ability to correctly identify new weeds is an important skill for monitoring. The South Dakota State University (SDSU) Extension Service publishes brochures describing identification characteristics and control measures for South Dakota's noxious weeds. Similar brochures for these or other invasive plants may be obtained from other state or federal agencies. Copies of these brochures or other weed identification materials will be kept on file to assist in identifying these weeds should they be found on or near reservoir lands. The land manager and his staff should watch for these plants while working and collect samples of plants which may fit the descriptions. Monitoring assistance may also be obtained by working cooperatively with permittees, recreational users and adjacent landowners. Potential projects or activities which may facilitate cooperation in monitoring for new invasive plants include the following.

- Provide annual training for seasonal employees working at the reservoir to insure their ability to identify invasive plant species. Reclamation will assist with training if requested.
- Posting photos and educational information on kiosks in areas of high public use to illicit public assistance in identifying and preventing the introduction of invasive weeds.
- Develop a program and associated packets of information explaining the permittees responsibilities for controlling noxious and invasive plants on lands identified in their permits. Include identification brochures in these packets. Reclamation will assist with the development information packets for this program. The packets will be distributed by the county auditors office as permits are renewed annually.
- Direct mailing of noxious weed brochures to adjacent landowners, requesting assistance in reporting and monitoring for identified problem weeds.
- Site visits to all reported locations of new leafy spurge infestations or new invasive weeds on the reservoir lands. Document the location and extent of the infestation. Reclamation may be able to assist in mapping noxious weed infestations on a GIS database.

SITE SPECIFIC PEST MANAGEMENT TECHNIQUES

Land Use Types : Land use types with similar management objectives/constraints as related to pest management have been designated. The land use types associated with Belle Fourche Reservoir are shown in Figure 1.

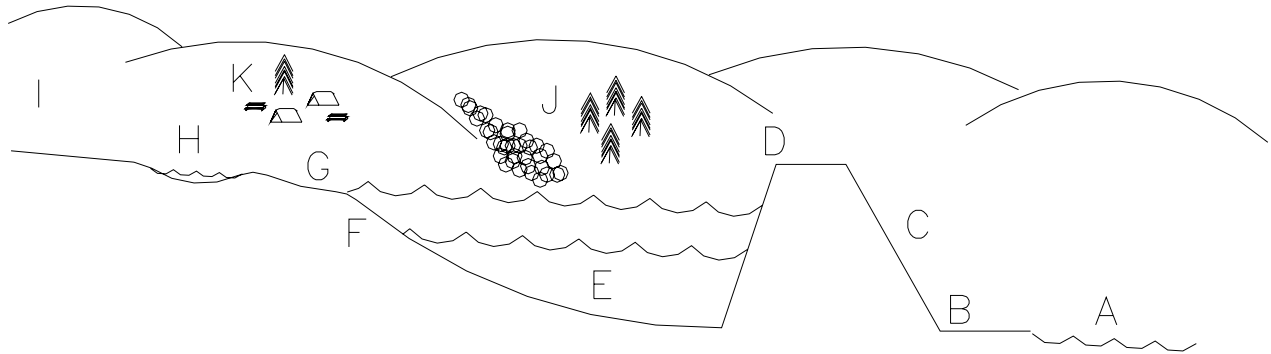


Figure 1: Diagram of Land Use Types Associated with Belle Fourche Reservoir

KEY

- A. Tailrace and river below the dam.
- B. Uplands and river banks below the dam.
- C. Crown and down-stream face of the dam.
- D. Rock rip-rap on up-stream face of the dam.
- E. Reservoir pool.
- F. Shoreline between conservation and flood pool elevations.
- G. Shoreline above water maximum water elevation.
- H. Wetlands and ponds.
- I. Grasslands - upland grasslands, may or may not be under agricultural permit.
- J. Woodlands and tree plantings.
- K. Developed recreation areas
- L. Other (roads, structures, maintenance and storage facilities, etc.).

Management Techniques

The pest control techniques described in this plan include those currently in use, and other recommendations found in the literature. Recommended chemicals, rates and other practices were developed from the 2001 North Dakota Weed Control Guide, chemical labels and other publications listed in this plan. New chemicals or tank mixes, biological control agents and other methods are continuously being developed which provide better pest control or improved environmental safety. Additional pest species may pose future problems. The intent of this plan is to accommodate trial applications of new techniques and to encourage control of new pest species on the area. The application of pest control techniques not included in this plan should be documented and the results evaluated. New chemicals applications may only be applied within the specifications on the label. This plan may be updated at any time to incorporate successful techniques.

Prevention - Preventing the introduction of invasive plants and/or other pests onto land or facilities which are not infested is the most practical and cost effective method of pest management. Supporting rules, laws and policies which prevent the transport of seeds and vegetative reproductive plant parts are effective means of preventing the introduction of invasive plants. Such policies include requiring that feed or hay brought onto Reclamation land be certified weed free; that construction equipment be cleaned and inspected before being permitted on the site; that seed and mulches used to revegetate disturbed areas be certified as weed free and/or tested for noxious weed seed; boats and trailers should be cleaned of wetland vegetation and live wells emptied before leaving an area or entering a different body of water. Educated visitors and users of the area may assist managers in locating and identifying new invasive plants or finding new infestations in previously uninfested areas. Follow-up inspections will be necessary to confirm the presence of new invaders and to begin initiating an eradication program. Early detection and eradication of a new invader is the second most effective method of pest management.

Physical/Mechanical Methods - include mowing, tilling, clipping, hand digging, pulling, trapping, or other activities that either physically remove or destroy the pest, create a physical barrier to exclude a pest from an area, or prevent a pest from damaging a facility. These methods are generally divided into three categories: manual control, mechanical control, and exclusion. The primary difference between manual and mechanical control techniques is the size or difficulty of the job. As pest problems grow, mechanical techniques become more cost effective. Mechanical controls utilize machines or other equipment to remove pests. Exclusionary techniques have the advantage of being proactive. If included during the design and construction phases of a project, they will prevent damage from occurring and reduce the cost of maintaining or retrofitting facilities.

Cultural Control Methods - include prescribed burning, and cultivation of more desirable, competing vegetation to prevent the establishment or replace a weedy species in an area. Some cultural control methods will not result in effective long term control, however they may present the most effective option on environmentally sensitive sites or public recreation areas. Cultural methods may provide a short term solution by preventing an invasive plant from setting seed until a long term technique may be used. Cultural methods may also enhance the effectiveness of other techniques when integrated with chemical or biological control methods.

Biological Control Methods - include the introduction of insects, bacterial and fungal diseases or other living organisms, such as grazing by domestic livestock, in order to control populations of a pest species. Introduced biological control agents are only practical if populations of the pest are high enough to support a population of the control agent. The area and density of the infestation must be large enough to support the establishment of the biological control agent. The use of biological control agents on the reservoir lands will be documented. Locations of release sites will be located on maps and the following information will be recorded: (1) species, (2) number released, (3) date of release, and (4) legal description of release site. The release site will be identified with a fence post and photographed, if possible, to determine effectiveness to the treatment. Release sites will be monitored annually for both the presence of the biological control agent and its effect on the pest species. When making cost comparisons between biological control methods and other methods (i.e.: mechanical, chemical) the comparison should be done over a range of years then just one single year. Biocontrol methods often need a couple of years to get

established before their benefits are readily noticed. Approximate prices for biocontrol insects within this document are from the 2003 Integrated Weed Control price list.

Chemical Control Methods - include the use of any manufactured or extracted chemical compound which is applied to control a pest species. Herbicides, insecticides and rodent poisons are all considered chemical control methods. The chemical applications described in this plan include both current applications and those proposed for future use. The application rates in this plan are based on the guidance provided in the 2001 North Dakota Weed Control Guide (NDSU Extension Service) and other publications. Future editions of this guide will be used to develop trial rates for new pesticides. Attachment "A" is a summary table of the chemical control measures included in this plan.

- A. The Dam, Both Up-stream and Down-stream Faces and a 50 foot Buffer from the Toe Slopes - Zones C, D and part of B

The vegetation and pest management on Belle Fourche Dam and immediately surrounding the diversion dam and within the inlet canal right-of-way is included in the management agreement between Reclamation and the Belle Fourche Irrigation District. The pest species and control techniques associated with these areas are addressed in the Belle Fourche Irrigation District IPM Plan.

- B. Aquatic and Riparian Areas and Upland Areas with High Potential for Runoff or Flooding - Zones A, B, C, D, E, F, G and H - The dam, tailrace and river below the dam, river banks, reservoir pool, shorelines, and wetlands.

1. **Pest Category: Emergent Vegetation**

Target Species: Purple Loosestrife (*Lythrum salicaria*) - A herbaceous perennial which may grow up to eleven feet tall. It has multiple stems with four to six sides, and lance-shaped leaves arranged either in whorls or opposite patterns around the stems. The showy rose-purple flowers have five to six petals and are arranged in long spike-shaped inflorescence. The plant reproduces primarily by seed and one mature plant can produce more than two million seeds each year. The seeds may remain viable for 20 years. It is also capable of sprouting from cut stems and root fragments. Purple Loosestrife is a highly invasive aquatic plant that forms dense stands that displace native aquatic and riparian communities. It degrades wildlife habitats, reduces hunting, fishing, boating and other aquatic recreational opportunities. It reduces forage quality in wetland pastures and clogs irrigation canals. However, due to the beauty of its flowers, it has been planted as an ornamental in flower beds, whence it has escaped.

Threshold for treatment: Threshold for treatment of purple loosestrife is one plant. This plant is not currently a problem at Belle Fourche Reservoir, however the invasive nature of this plant makes early eradication a high priority to prevent this plant from becoming established. This plant has escaped and is growing as a weed in the Lawrence County to the south.

Management Alternatives: The management alternatives for controlling purple loosestrife in wetland and riparian areas include education to prevent infestation include chemical, cultural, and biological techniques. Early detection and eradication are important as a small population can explode in only a few years. Techniques used prior to establishment are simple and require little planning. Should purple loosestrife become established, eradication will require long term planning to integrate various control measures and coordination with other agencies and adjacent landowners. Some techniques, particularly biological control, require several years to accomplish. Controlling this weed after it becomes established will be expensive and labor intensive. Early action can save both time and money.

Physical Treatments: Physically removing purple loosestrife is labor intensive and requires intensive monitoring. This method is most effectively applied on small infestations or to prevent seed production until a herbicide can be applied to eradicate the plants. Do not mow. Mowing may spread cut plant pieces which can sprout and cause new infestations.

- 1.) **Hand digging or pulling plants** before they go to seed will prevent plants from spreading. Care must be taken to remove the entire plant from the site. Purple loosestrife can regenerate from pieces of stem or root. Don't allow plant parts to float away. This is only feasible for initial control of small infestations (less than 100 plants). The site should be monitored periodically throughout the growing season for additional stems.
- 2.) **Clipping off flowering stalks by hand** will prevent seed production. This will not kill the plant, but will help prevent spreading. Repeated clipping should continue throughout the flowering season (June - Sept.) or until plants can be sprayed with a herbicide. Note: Do not leave cut pieces of stem or flower stalk in water or wet areas as it can reproduce vegetatively. Place in a plastic bag for disposal.

Biological Treatments: Biological control agents are only practical if purple loosestrife becomes established at Belle Fourche Reservoir. Should this occur, the use of biological control agents will be documented and monitored. Locations of releases will be mapped and the following information will be documented: species of control agent, number released, date, and legal description of release site. The release site will be identified with a fence post and a photographed. Release sites will be monitored annually for both the presence of the biological control agent and its effect on the loosestrife infestation to determine effectiveness to the treatment. Three species of insects have been released in North Dakota by North Dakota State University (NDSU).

- 1.) **Loosestrife Beetles** (*Galerucella calmariensis* and *Galerucella pusilla*) Introduced from northern Germany, these beetles and their larvae feed on the leaves and buds of loosestrife. Feeding activities of these insects stunt the

loosestrife plants, reduce seed production, and may result in defoliation or possibly kill the plant. Approximate Cost: \$75 for 105 insects.

- 2.) **Loosestrife Root Weevil** (*Hylobius transversovittatus*) Introduced from northern Germany, the larvae live in the roots while the adults feed on the foliage. Approximate Cost: Not Available.
- 3.) Two species of loosestrife seed weevil (*Nanophyes brevis* and *Nanophyes marmoratus*) have been introduced into the United States, but are not yet available for extensive redistribution. Approximate Cost: Not Available.

Chemical Treatments: Herbicide applications are among the most effective early eradication techniques for controlling purple loosestrife. However, the sensitive nature of aquatic habitats and difficulty of accessing infestations limit the selection and use of chemicals.

- 1.) **Rodeo (glyphosate)** - An EPA approved herbicide for use in aquatic areas to control vegetation. Rodeo has a low toxicity (LD 50 values) to wildlife and aquatic organisms, and is very safe to use. This herbicide is non-selective, so application is limited to spot treatment to avoid wholesale destruction of vegetation. Precautions should be taken to avoid treating plants coated with dust, which reduces Rodeo's effectiveness. Rodeo should be applied with a non-ionic surfactant approved for use near water. One such surfactant is X-77 Spreader. Purple loosestrife should be sprayed in late summer to early fall (July - Sept.). A concentration of 1-1½ percent by volume is recommended for treatment. Approximate Cost: \$110 per gallon.
- 2.) **2,4-D amine**, formulation labeled for use near water may be used on shorelines, in drainages and on upland sites to control seedlings. The rate of application is 2-4 quarts per acre of 4 lb. per gallon concentrate. Cost \$12-18 per gallon
- 3.) **Garlon 3A (triclopyr)** - Apply up to two gallons per acre from bud to mid flowering stage. Do not apply after bud stage. May be used near water, but do not apply directly to surface water. Cost \$68 per gallon.

2. **Pest Category: Perennial and Biennial Broadleaf Weeds**

Target Species: The following noxious weed species are of greatest concern at the reservoir.

- A. **Canada Thistle** (*Cirsium arvense*) is a colony-forming aggressive perennial which can grow to 5 feet tall. Underground parts survive to produce new shoots the following season. New shoots develop from lateral buds. The leaves are spiny, and the edges are serrated and ruffled. These weeds grow in cultivated fields, pastures,

and rangelands. In heavy concentrations it prevents grazing and is highly competitive with crops.

Threshold for treatment: Control actions will be initiated where Canada thistle is dominant on areas greater than five feet in diameter, or 20 plants per 1/10 acre.

- B. **Musk Thistle** (*Carduus nutans*) is a biennial reproducing only by seeds. It grows 2 to 6 feet tall. The leaves are deep lobed, very prickly and 3 to 6 inches long. Spiny leaves also extend down the stem giving it a winged appearance. The flowers are rose-purple in color. Dense populations of plants discourage animals from occupying that portion of the field, in which it grows, thus reducing the forage available for livestock.

Threshold for treatment: Control actions will be initiated where musk thistles are dominant on areas greater than five feet in diameter, or 20 plants per 1/10 acre.

- C. Field **Bindweed/Creeping Jenny** (*Convolvus arvensis*) is a perennial that spreads by horizontal roots, branches and seeds. Its vine grows from 2 to 7 feet long spreading over the surface of the ground. The leaves are numerous, and may vary in shape and size, but are usually shaped like arrowheads. The flowers are trumpet-shaped, white to pinkish in color, and about 1-inch diameter. It generally grows in dense, tangled mats that reduce crop productions by as much as 60 percent. Control of this weed is most critical near adjacent cropland, where it becomes a problem in small grain fields.

Threshold for treatment: The thresholds for initiating control actions for field bindweed are areas greater than five feet in diameter where bindweed is dominant or other locations where the park manager and adjacent landowners agree treatment is warranted.

- D. **Hoary Cress** (Whitetop) (*Cardaria draba*) is a perennial herb up to 24 inches tall with alternate lance-shaped leaves. Stout stems are branched at the top with many small white flowers. Flowers have four petals. This plant has an extensive root system and reproduces from the roots as well as seed. It is drought resistant and will spread rapidly if not controlled. Currently there are about a 100 acres of hoary cress around the reservoir.

- E. **Leafy Spurge** (*Euphorbia esula*) is a perennial that reproduces by seeds and has an extensive root system which provides numerous buds capable of producing new shoots. It grows 1 to 3 feet tall. The narrow leaves are 1 to 3 inches long. The entire plant contains a milky juice called latex. The milky latex is poisonous to some animals and can cause blistering and irritation on the skin. This species is highly invasive and very difficult to control. It will displace native vegetation and other desirable plants.

Threshold for treatment: The threshold for initiating control actions for leafy spurge is one plant. Leafy spurge is currently present on the face of the Belle Fourche dam. It is also a problem on private lands on the Belle Fourche River upstream of the diversion dam.

Management Alternatives: The mechanical, cultural and chemical management techniques are similar for these plants. As with most plants physical removal of the roots and stems is neither economically or environmentally feasible. They have extensive root systems. Both Canada thistle and leafy spurge respond favorably to a burn, but the technique is useful for removing litter, or setting back the growth of a pest to prepare a site for either chemical or biological control methods. Severe infestations may be identified, eradication of a pest and planting more desirable competing vegetation may be necessary. Selection of an alternative should be based on controlling the species of greatest concern in a manner that is both cost effective and environmentally sensitive.

Mechanical Treatments

- 1.) **Mowing** - Repeated mowing will help prevent seed production and dispersal. It will reduce thistle infestations, particularly of biennials. Mowing for several years reduces root vitality and inhibits the spreading of spurge from lateral roots. Monitoring is needed to determine when mowing should be done. Most perennials will not be eliminated using only this method. Obstacles such as rocks, trees and steep terrain will limit the use of this technique.

Biological Treatments - Biological control agents are specific to a particular pest species. Introducing biological control agents is not an immediate solution to noxious weed problems. Establishing a population may take several years before results become evident. Biological control agents are environmentally suitable for all land use types. However, habitat requirements of specific agents may be better met in certain land cover types. These areas will be more conducive to establishment. Site specific micro-climatic factors may also affect survival. The introduction of biological control agents in proximity to agricultural or urban areas where insecticides are sprayed may also affect successful establishment. Biological control agents have been introduced in South Dakota for Canada thistle, musk thistle and leafy spurge. Sources for biological control agents may be acquired by contacting the South Dakota Department of Agriculture.

Biological Control Agents for Canada Thistle and/or Musk Thistle

- 1.) **Canada thistle stem weevil (*Ceutorhynchus litura*)** This insect was released in South Dakota and adults should be available for redistribution. This weevil overwinters as an adult in the soil near the plant and should be collected in the early spring. The larval stages mine the stem, root crown and root. They do not cause enough damage to affect the appearance of the plant. However, they create exit holes below the soil surface, which allow other small insects, nematodes and pathogens to enter the plant. The rotting of the underground shoots during winter will either kill the plant or reduce shoot production the following spring. These insects can spread about five miles and increase to affect 80 percent of the Canada thistle stems in a ten-year period. The insect

should be supplemented with other biological control agents or chemical control to be effective. Approximate Cost: \$125 for 105 insects.

- 2.) **Canada Thistle Bud Weevil (*Larinus planus*)** This insect was initially released into the United States accidentally. It has since been distributed fairly widely in Montana, North Dakota and South Dakota. The larvae feed on seed producing tissues while the adults feed on the leaves. Alone, this agent will only affect the spread of Canada thistle by seed. However, it seems to enhance the effects of the stem weevil thistle, if released in the same sites. The two insects attack different parts of the plant; and therefore, do not compete with each other. Adults may be collected in early spring or late summer. Approximate Cost: Not Available.
- 3.) **Thistle Stem Gall Fly (*Urophora cardui*)** This insect was released at Duerre Lake on the irrigation district in 1997 and at Belle Fourche Reservoir in 1998. The insects over winter as larvae in the galls. Galls may be collected in the fall, winter or early spring for dried stems and stored in paper sacks or cardboard boxes in the refrigerator at 39 to 46°F. It may be necessary to mist the galls every couple of weeks. Fifty to 100 galls may be placed in infested areas in the early spring or released as adults after they emerge. Adults may be caught in sweep nets, but are not often caught in large numbers. Adult females lay up to 30 eggs in vegetative shoots. The larvae tunnel into the stem and form Galls. Multiple larvae are usually found in a single gall. The galls form a metabolic sink and stems above the gall are often retarded and may not produce flowers. This insect does not kill the plant, but will reduce seed production. It prefers dense stands of Canada thistle in moist semi-shaded areas. Approximate Cost: \$90 for 105 insects.

Biological Control Agents for Leafy Spurge

- 1.) **Flea Beetles (*Aphthona* sp.)** *Aphthona nigriscutis* were introduced to the downstream slope of the dam in July 1995. Reductions in spurge infestations became evident in 1998 and about 5,000 were harvested for release at Kraft Slough Wildlife Development Area. Additional flea beetles (*A. czwalinae*, *A. lacertosa* and *A. nigriscutis*) were introduced to the river valley slopes and upland areas below the dam in July 1998. These populations will continue to be monitored and surplus beetles will be harvested and moved to other leafy spurge infestations around the reservoir. Approximate Cost: \$50 for 450+ insects or free if collected from other introduction sites.
- 2.) **Leafy Spurge Tip Gall Midge (*Spurgia esulae*)** are a delicate fly with a very short adult life. The larvae form a gall and feed in the growing tips of the plant, preventing it from flowering and producing seed. While not as effective at controlling large infestations of leafy spurge, the presence of this insect complement flea beetles by inhibiting the ability of spurge to spread seed. A colony is established near Valley City, North Dakota; however, this insect must

be redistributed in the pupal stage within the galls and released immediately following emergence. The delicacy of this operation may dictate that this insect spread through natural dispersal. Approximate Cost: \$50 for 50 galls.

- 3.) **Two other insects** have been released in North Dakota to control leafy spurge. While they may assist in the control efforts, they are either more difficult to establish or have not proved to be as effective as the flea beetles in controlling leafy spurge. The leafy spurge hawkmoth, *Hyles euphorbiae*, and The red-headed leafy spurge stem borer, *Oberea erythrocephala*, both prefer areas with trees and may provide more benefits in riparian areas. Approximate Cost: Not Available.
- 4.) **Grazing sheep and goats** provides an alternative to herbicides in controlling the top growth of leafy spurge in pasture and range land. Grazing will slow the spread of leafy spurge and increase production and availability of grasses to other livestock. Grazing with goats will control spurge with less utilization of grasses. Additional information may be obtained from *Controlling Leafy Spurge using Goats and Sheep* (NDSU Extension Service Circular R-1093).

Biological Control Agents for Field Bindweed

- 1.) **Bindweed Gall Mite (*Aceria malherbae*)** is a microscopic mite which forms galls on the leaves, petioles, and stem tips of field bindweed. The galls cause the leaves to fold and twist and infested stem buds fail to elongate; causing the plant to form compact clusters of leaves. The mites stress the plants and reduce flowering. Adults, nymphs and egg-laying is all completed within the galls. Gall mites are transported by collecting and moving plant parts with galls to uninfected bindweed plants. Mites may be kept several weeks if galls are kept cool and damp. After mites become established they can be spread more rapidly by mowing the area. Mites are not readily available, but there may be opportunities to acquire some for research purposes. Approximate Cost: Not Available.

Chemical Treatments - The chemicals listed in this section include only those labeled for use in environmentally sensitive aquatic and riparian areas. Chemical selection, application rates and timing of application may vary based on the target species. In the interest of efficiency, to avoid constantly changing the tank mix, selection of the chemical and application rate should be based on requirements for controlling the pest species of greatest concern. The preferred application method consists of spot applications to prevent large scale eradication of desirable native vegetation. Please note any grazing restrictions on labels in areas with grazing permits.

- 1.) **2,4-D Amine** (formulation labeled for use in or near water), rates based on 4 lb. per gallon concentrate. Note grazing restrictions on the label. Approximate Cost: \$12-18 per gallon.

2,4-D Amine Application Rate Table

Pest	Rate (per acre)	Growth Stage or Timing	Comments
Canada Thistle	2-4 pints	Spring. Plants 12 inches tall and actively growing	Suppression only.
Musk Thistle	3-4 pints	Fall. Rosette stage or actively growing plants	Most effective when applied in late fall, prior to a killing frost. This allows for maximum seedling emergence and largest rosette size.
Field Bindweed	2-4 pints	12 inches long and growing.	Not the most effective treatment
Hoary Cress	4-6 pints	During full flowering growth stage	May take 2-3 seasons to control infestation.
Leafy Spurge	2-4 pints	June, during true flower or early September, after stems develop fall regrowth	Most effective on seedlings, will only kill top growth on mature plants.

- 2.) **Krenite S (fosamine)** is effective only on leafy spurge. Apply 1.5-2 gallons per acre during true flowering or early fall. Approved for use adjacent to water on dry wetlands and shorelines and near trees. Works best in high humidity and good soil moisture. Do not contaminate surface water during application. Note: This chemical is very costly and should only be used for spot spraying in sensitive areas. Approximate Cost: \$60 per gallon.

- 3.) **Plateau (imazipic)** has been used effectively to control leafy spurge if applied in the fall, but it is also labeled for several other weed species. It is labeled for application in seasonally dry areas after the water has drained. Do not apply to water. As a bonus, several species of native grasses and wildflowers are fairly tolerant to the herbicide. A supplemental label granting Section 18 Emergency Exemption permits use of Plateau on pasture and rangeland to control leafy spurge. Otherwise, it may not be used on areas being grazed or cut for hay. Approximate Cost: \$2.25 fluid ounce or \$288 per gallon.

Plateau Application Rate Table

Pest	Rate (per acre)	Growth Stage or Timing	Comments
Canada Thistle	12 oz with 2 pints methylated seed oil	Spring. Apply when thistle is in rosette or early bolt .	Applications made at flowering will suppress existing foliage, but may result in root suckering.
Musk Thistle	8-12 oz with 2 pints methylated seed oil	Spring. Apply when thistle is in rosette or early bolt .	Most effective when applied in late fall, prior to a killing frost. This allows for maximum seedling emergence and largest rosette size.
Field Bindweed	8-12 oz with 2 pints methylated seed oil	12 inches long and actively growing.	
Hoary Cress	8-12 oz with 2 pints methylated seed oil	Apply to young succulent plants which are actively growing,	Multiple applications through out the season may be necessary in order to control.
Leafy Spurge	8-12 oz with 2 pints methylated seed oil	Late August through September when good soil moisture is present before a killing frost.	Apply with 2 pints of methylated seed oil per acre. For spot treatments prepare 1-1.5% solution with mso.

3. Pest Category: Woody Vegetation

Target Species: Saltcedar (*Tamarix spp.*) Saltcedar is a shrub or small tree with deciduous, juniper-like leaves and small pink to white flowers born on finger-like clusters. Salt cedar is very competitive, sending its roots down to the water table, it is both drought and flood resistant, and tolerant to saline soils and poor water quality. It exudes a salty secretion which accumulates on the soil as it drops its leaves and suppresses germination of other seeds. It flowers continuously from early spring through late fall and may produce up to 500,000 seeds annually (Conway, Sirota and Rose 2003). Left uncontrolled, it chokes out native trees and other vegetation, forming moderate to dense monocultures along streams, rivers and reservoir shorelines. Once established, it is difficult to eradicate either mechanically or with chemicals. Saltcedar is also a heavy consumer of water and estimates say that a mature tree may transpire 200 gallons of water a day (SD Department of Agriculture 2003).

Threshold for treatment: The threshold for initiating control actions for saltcedar is one plant. A few saltcedar shrubs have been identified at Belle Fourche Reservoir. Control actions on these plants is imperative to prevent wide spread establishment of this plant.

Management Alternatives: Saltcedar is extremely difficult to kill using only mechanical or cultural methods. An extensive root system and a high tendency to sucker render these methods ineffective if used alone. Burning may be used to set back large stands, reduce the height of the plants and create a more uniform stand prior to making a herbicide application. The cut-stump method of cutting the saltcedar and applying the chemical is effective on small stands and isolated plants in sensitive areas where over spraying on native vegetation or near water is a concern. Labor costs may become prohibitively high in large, dense stands. Biological control agents are currently being investigated, but have not been released and are unavailable at this time. The treatments listed below are directed toward the small stands and individual plants likely to be found around Belle Fourche Reservoir.

Chemical Treatments - Chemical treatments may either be used alone or combined with mechanical or cultural treatments. Followup checks are important to ensure that total control has been achieved or whether additional treatments are needed. Application rates are described for mixing in small ATV or backpack sprayers.

- 1.) **Arsenal (imazapyr)** - A foliar application of 2-4% solution of Arsenal has been shown to be 90-100% effective at controlling saltcedar. Herbicide may be applied any time plant is fully leafed out from late spring through late summer. Spray foliage on at least two sides of the plant to wet. Do not drench so that solution is running off. Try to insure every stem has received some herbicide contact. Arsenal is a non-selective which is readily absorbed through leaves, stems and roots. Over spray and runoff may harm grass and other surrounding vegetation. Do not spray when winds exceed 5 mph. Avoid contact with surface water. It may take up to two years for Arsenal to translocate through all the roots and kill the plant. Mechanical or cultural treatments, which may simulate suckering should be avoided for a couple of years after treatment, as it reduces effectiveness. Arsenal may also be tank mixed with Roundup or Rodeo to reduce the cost of larger applications without reducing the effectiveness. Approximate Cost: Arsenal - approximately \$270 per gallon.

- 2.) **Garlon 3A, Garlon 4, Remedy or Pathfinder RTU (triclopyr)** - Triclopyr is more effective in controlling saltcedar through basal bark or cut-stump applications. These applications require considerably less herbicide than foliar applications. In applying a basal bark treatment, the herbicide is applied from the root crown at ground surface to about 12-15 inches above the ground. The stems should be thoroughly wet, but not to the point of runoff. It is effective on plants with stems less than 6 inches in diameter. Only Garlon 3A is not labeled for basal bark treatments. Cut-stump treatments involve cutting the trunk or stems of saltcedar as close to the ground as possible without damaging the equipment. Chainsaws and brush cutters are effective tools for this purpose. Apply herbicide to the entire the outer portion of the cut edge, including the cambium and bark until wet. Spray bottles, backpack strayers, paint brushes and sponge applicators have all been used for this purpose. If the plant has multiple stems, each stem must have herbicide applied to it. Late summer or early fall applications are more effective for cut-stump treatments. Both Garlon 3A and Pathfinder are applied at full strength. Garlon 4 and Remedy should be mixed with oil (Arborchem Basal Oil, diesel fuel, No.1 or No.2 fuel oil or kerosene) at a 1:3 ratio. The effectiveness of these

treatments range from 85 to 100%. Burning within two years after treatment may reduce the effectiveness. All are labeled for use in seasonally dry areas, but may not be sprayed directly onto surface water. Garlon 4 and Pathfinder are highly toxic to fish and aquatic invertebrates. Do not use near an open flame. All are combustible and release toxic vapors if burned. Approximate Cost: Garlon 3A - \$78 per gallon, Garlon 4 - \$100 per gallon, Remedy - \$91, Pathfinder - \$25-30 per gallon.

C. Land Use Type: Grasslands, Haylands and Rangelands - Zone I

1. Pest Category: Perennial and Biennial Broadleaf Weeds

Target Species: Canada Thistle, Musk Thistle, Field Bindweed, Hoary Cress and Leafy Spurge. Species descriptions can be found in Section B.2.

Management Alternatives - Areas falling under this land use type are not as environmentally sensitive as those previously described in Section B. The control methods described in Section B.2. are suitable for use in these areas. However, additional chemicals may be more cost effective or suitable for use where grazing is permitted.

Agricultural permit holders will be responsible for controlling weeds identified as noxious or invasive plants on lands covered under their permits and reporting the presence of these plants to the County Weed Control Officer. In areas where noxious weeds are already a problem, and the cost of control is greater than the value of the permit, assistance may be available from the Irrigation District and/or Reclamation. If Reclamation or the Irrigation District treat any areas with grazing or haying permits, the permittee will be notified prior to treatment.

Prevention

- 1.) Supplemental Feeding of Livestock** - To prevent introduction of noxious or invasive plants, supplemental feeding of livestock will not be permitted on Reclamation lands surrounding Belle Fourche Reservoir without written permission of Reclamation or the Irrigation District. Only processed feed supplements or certified weed-free hay will be allowed.

Cultural/Physical/Mechanical Treatments

- 1.) Mowing** - Description on page 13.
- 2.) Grazing Management** - Thistles and other noxious weeds often invade overused or disturbed land. Overgrazing weakens desirable plant species making a pasture more susceptible to invasions of weed species. Pastures protected from overgrazing through proper grazing management and/or rotational grazing practices have fewer problems with thistle establishment.

Biological Treatments - The biological control agents listed in Section B.2. are suitable for use on both grasslands and haylands. As these control agents reduce the density of weed populations, forage quality should improve. Agricultural permittees will be notified of the release of biological control agents to prevent permittee from unknowingly treating release sites and suppressing establishment of the control agent.

Biological Control Agents for Canada Thistle and Musk Thistle - Descriptions on page 13 and 14.

- 1.) **Canada thistle stem weevil (*Ceutorhynchus litura*)**
- 2.) **Canada Thistle Bud Weevil (*Larinus planus*)**
- 3.) **Thistle Stem Gall Fly (*Urophora carduoi*)**

Biological Control Agents for Leafy Spurge - Descriptions on page 14.

- 1.) **Flea Beetles (*Aphthona* sp.)**
- 2.) **Leafy Spurge Tip Gall Midge (*Spurgia esulae*)**
- 3.) **Red-headed Leafy Spurge Stem Borer (*Oberea erythrocephala*)**
- 4.) **Grazing sheep and goats**

Biological Control Agents for Field Bindweed - Description on page 15

- 1.) **Bindweed Gall Mite (*Aceria malherbae*)**

Chemical Treatments - The preferred application method consists of spot applications to prevent large scale eradication of desirable native vegetation. Chemical selection and application rates should be based on requirements for controlling the pest species of greatest concern. Check chemical label for any grazing or haying restrictions.

- 1.) **2,4-D Amine** - Description on page 16.
- 2.) **Krenite (fosamine)** - Description on page 16.
- 3.) **Plateau (imazipic)** - Description on page 16.
- 4.) **Banvel (dicamba) + 2,4-D amine** - A surfactant at 0.5 percent should be added to improve control of large plants. Restricted entry interval - 48 hours.
Approximate Cost: Banvel - \$95 per gallon, 2-4,D amine - \$12-18 per gallon, Weedmaster, a commercial premix, - \$30 per gallon.

Banvel +2,4-D Application Rate Table

Pest	Rate (per acre)	Growth Stage or Timing	Comments
Field Bindweed	4 + 2 pints	Apply when weed has 12 inches of growth and actively growing	May also be applied in the fall prior to killing frost
Canada Thistle	1.5-4 +2 pints	Spring, plants 12 inches tall and actively growing	Suppression only.
Musk Thistle	1.5-4 +2 pints	Fall, rosette stage or on actively growing plants	Most effective when applied in late fall, prior to a killing frost. Allows for maximum seedling emergence and largest rosette size.
Leafy Spurge	4-6 pints	Actively growing plants	Most effective on seedlings

2.) Curtail (clopyrailid + 2,4-D) - Most cost effective treatment for thistle and other members of the composite family. Approximate Cost: \$38 per gallon

Curtail Application Rate Table

Pest	Rate (per acre)	Growth Stage or Timing	Comments
Absinth Wormwood	4-6 pints	12 inches tall and actively growing,	Applications from late June to mid August provide greatest residual control.
Canada Thistle	6 pints	Early summer in bud growth stage or fall in rosette stage	Will provide near complete control for several years.

Curtail Application Rate Table Continued

Musk Thistle	4-6 pints	Fall, rosette stage or on actively growing plants	Most effective when applied in late fall, prior to a killing frost. This allows for maximum seedling emergence and largest rosette size.
---------------------	------------------	--	---

3.) Landmaster BW (Glyphosate + 2,4-D) - applying 54 oz. per acre to leafy spurge in late June or early July during the seed-set growth stage will provide about 75 percent control with only 0-10 percent grass injury. This treatment provides better control the first year than the Tordon + 2,4-D mix and is less expensive per acre. However, it

should not be applied to the same area two consecutive years. By rotating annual treatments with Tordon + 2,4-D, 95 percent control may be obtained by the third year. This chemical is relatively unforgiving, grass injury will increase if the chemical is over applied or if applied during late summer or fall. Approximate Cost: \$22 per gallon.

2. Pest Category: Grasses

Target Species: Cheatgrass (*Bromus secalinus*), Downy Brome (*Bromus tectorum*), Japanese Brome (*Bromus japonicus*) - These annual/winter annual grasses often germinate after the first fall rain or in early spring; young plants overwinter with the roots continuing to grow until soil temperatures fall below 37EF. Shoots grow rapidly in the spring taking advantage of an established root system and early moisture. These grasses are especially invasive in arid grasslands, often getting a foothold along roads and trails and encroaching into native prairie. Cheatgrass is a prolific seed producer and produces viable seed even in extreme drought. Seed heads form in late April or early May and seeds are mature by mid to late June. These grasses utilize early spring moisture before most native cool season and warm season grasses emerge. They are only palatable to livestock early in the season. The plant will then dry up and die. Dry plants are very flammable and induce changes in the fire cycle frequency and timing of areas they invade. Wildfires fueled by cheatgrass occur earlier in the year, setting back native grasses before they mature. Fire frequency can increase to every 3-5 years, which does not allow many native shrubs and perennial grasses time to recover and a monoculture of cheatgrass will develop. This invasion is particularly destructive in sagebrush grasslands, which naturally only burned every 60-100 years. Belle Fourche Reservoir currently has about 200 acres which are heavily infested with cheatgrass, mostly Japanese brome. It is also found along many of the roads and trails. Threshold for Treatment: Cheatgrass and other introduced annual brome grasses currently occur on Reclamation lands around the Belle Fourche Reservoir and the Diversion Dam. Reclamation and their managing partners utilize multiple management practices to try to contain or reduce the spread of these grasses.

Objectives for Treatment: Control cheatgrass and other introduced annual brome grasses where there are currently heavy infestations and prevent them from spreading and invading native grasslands.

Management Alternatives: Since cheatgrass reproduces entirely by seed, the key to controlling existing infestations is to eliminate new seed production and deplete the existing seed bank. Lasting control of cheatgrass will require an intensive combination of chemical control, physical or cultural control, and proper livestock management in areas being grazed. (Carpenter and Murray 1999) This "cumulative stress" method will keep the plants constantly under stress, reducing their ability to flourish and spread. The greater the dominance of cheatgrass in a stand, the more intensive management is required. Total eradication of cheatgrass is unrealistic, so future management will be required to keep it in check.

Physical/Mechanical Treatments - Hand-pulling or other physical removal is only cost-effective on small isolated stands. Care is needed to insure that the root is removed. Clipping can reduce seed production, but must be repeated at least every three weeks, as cheatgrass will tiller and produce seed at the mowed height. Haferkamp and Karl (1998) found that some Japanese brome produced seedheads when clipped weekly to three inches. This technique is very labor intensive on large infestations and may still be ineffective.

Cultural Treatments -

Prescribed Burning has been found to reduce the density of Japanese brome the following growing season as it destroys some of the seed bank and reduces litter accumulation. Litter accumulation conserves moisture needed for Japanese brome seed to germinate. In the absence of intensive grazing, litter accumulations in the northern mixed grass prairie stabilize 5-6 years after a burn. Limiting fire-free periods to less than five years may potentially reduce Japanese brome densities, especially when autumn precipitation is low. However, fires tend to move very quickly through annual brome grass stands, and often do not have the intensity to burn all the litter and kill all the seed. With ample moisture the seeds germinate and plants may be more robust and produce much more seed the second growing season after a burn. Burning in mid April can reduce both plant density and seed production of Japanese brome for 4-5 five years as long autumn precipitation is below average (Whisenant 1990). Burning is ineffective when precipitation is above average and may be an unsuitable management tool in sagebrush habitats, as it will remove most sagebrush from the community. The desirable vegetation should also be considered when planning a prescribed burn. If the dominate native vegetation are cool-season grasses, an autumn burn would cause less damage to these species.

Planting Competing Vegetation - Controlling dense cheatgrass is often ineffective and may result in reinvasion by cheatgrass or invasion by other noxious weeds if a more desirable vegetation is not established. Seedbed preparation may be achieved by prescribed burning in autumn, lightly discing in early spring to kill established plants and stimulate germination of cheatgrass seed. Emerged plants will require either discing again or treating with glyphosate before seeding with a drill. Livestock may also be used in late spring to trample in broadcast seed and suppress cheatgrass plant vigor and seed production while more desirable vegetation is established. Vegetation seeded around Belle Fourche Reservoir will consist of native grasses and forbs approved by Reclamation.

Biological Treatments - There are currently no biological control agents available for cheatgrass. However, prescribed grazing in the spring has been used to manage light infestations, reduce cheatgrass seed production, aid in the seeding of more desirable vegetation, and present a better opportunity for native perennial grasses to compete.

Prescribed Grazing should begin in the spring when cheatgrass has grown tall enough to be accessible and palatable to livestock and the soils are dry and firm. The area should be rested for 3 to 4 weeks and then grazed again. If desirable grasses are present in the stand, the second grazing should be lighter, leaving about 3 inches of residual grass. This grazing prescription should be followed for a minimum of 2 consecutive years.

Chemical Treatments to control cheatgrass are fairly limited and timing is critical. Many of the chemicals which control cheatgrass are either totally non-selective or will harm other grasses.

- 1.) **Glyphosate (Roundup, Glyfos)** - Glyphosate may be applied at a rate of 0.2 to 0.5 lb. per acre to control cheatgrass. It is a non-selective foliar herbicide which will damage or kill any vegetation which it contacts. Glyphosate may be applied when plants have 3-5 tillers through the early dough stage to prevent seed production. If desirable vegetation is present in the stand, application should be made in the early spring, before most perennials emerge. Approximate Cost: \$35 - \$45 per gallon.
- 2.) **Plateau (Imazapic)**- Plateau may be applied in fall prior to frost (September) or in the spring before grasses exceed 4 inches in height. It is active as both a pre-emergent or post-emergent herbicide. It will control cheatgrass seedlings and prevent germination. Application rates vary from 4 oz. per acre to 12 oz. per acre. The rates are slightly different for downy brome and cheatgrass, and there is no current recommendation for Japanese brome. Test plots to determine effective rates and effects are advised. Higher rates may be needed for fall applications if residual control of annual brome grasses is desired in the spring. Plateau is labeled for native prairie restoration and most perennial grasses and many native forbs and shrubs have some tolerance. Do not apply more than 12 oz. per acre per year. Approximate Cost: \$2.25 per fluid ounce or \$288 per gallon.
- 3.) **Atrazine** - Applied in the fall at a rate of ½ to 1 lb per acre this is one of the most cost effective herbicides for controlling cheatgrass and increasing yields of perennial grasses. It should be applied after perennial grasses are dormant and before the ground freezes. It may also be applied in the spring before established grasses green-up. Atrazine is a pre-emergent and early post-emergent herbicide. However, it is only labeled for use along roadsides in SD and treated areas may not be cut for hay or grazed after application. Atrazine is a Restricted-Use Pesticide due to ground water and surface water concerns. It is highly mobile in the soil and is prone to leaching in sandy soils. Most of the soils around Belle Fourche Reservoir are derived from shale and not prone to leaching. However, it may not be applied within 200 feet of a lake or reservoir or within 66 feet of point where runoff would enter a stream or river. Approximate Cost: \$2.25 per pound.

- 4.) **Other Herbicides** - There are several other herbicides labeled for non-crop uses which will control cheatgrass or Japanese brome, but most are not labeled for rangelands and may not be grazed after treatment. Application of these herbicides will depend on current grazing practices in the treatment area.
- a.) **Sencor (Metribuzin)** - Applied at a rate of $\frac{1}{3}$ to $\frac{1}{2}$ lb. per acre this herbicide has been found to provide 98% control of downy brome with out significantly effecting seed production of planted western wheatgrass, slender wheatgrass, beardless wild, rye, thickspike wheatgrass, and meadow brome grass (Whitson, et al. 1997). Approximate Cost: \$19 per pound.
 - b.) **Oust (Sulfometuron methyl)** - The use of Oust to control cheatgrass and downy brome on federal rangelands has been approved through supplemental labels for the states of Idaho, Nevada, Oregon and Utah. Oust may be applied at a rate of $\frac{3}{4}$ to $1\frac{1}{2}$ oz. per acre in the fall within 6 weeks expected date the soil freezes or in the spring after soil thaws up to when seed begins to ripen. Treated areas may not be grazed for a minimum of 1 year after application. Oust has been found to have a minimal effect on native perennial grasses (Masters and Nissen 1998). Approximate Cost: \$12 per ounce.

3. **Pest Category: Invertebrates**

Target Species: Grasshoppers - In the northern plains, five species pose a significant threat to crops; migratory grasshopper, two-striped grasshopper, differential grasshopper, red-legged grasshopper, and clear-winged grasshopper. In this document knowledge of and treatment for grasshoppers is gleaned from the Grasshopper Biology and Management (McBride, Weiss, and Valovage 1990).

Threshold for Treatment: A grasshopper nymph population of greater than 100 per square yard or adult population of greater than 40 per square yard are indications of a severe infestation. Areas of concern should be checked after public notification of high grasshopper populations or complaints from adjacent landowners. Treat only areas where infestations warrant control.

Objectives for Treatment: Prevent high populations of grasshoppers in the grasslands around Belle Fourche Reservoir from adversely affecting crops on adjacent farm land.

Management Alternatives: Grasshoppers are more easily controlled while they are in the nymphal stage and still within hatching sites. The advantages to early treatment include the following: (1) fewer acres will have to be treated and less insecticide is needed to obtain control; (2) control is achieved before they have caused significant crop damage; (3) smaller grasshoppers are more susceptible to pesticides; and (4) early treatment prevents grasshoppers from reaching maturity and laying eggs which will reduce the potential grasshopper threat for the following year.

Chemical Treatments - Applications after 8:00 p.m. are preferred to minimize adverse effects to honey bees and other pollinating insects.

1.) **Malathion EC** (1 lb per acre) or **Malathion ULV** (8 fl. oz. per acre) - Do not apply to clover or alfalfa in bloom. Approximate Cost: Not Available.

2.) **Sevin (carbaryl)** - ½ lbs per acre for nymphs to 1½ lbs per acre for mature grasshoppers. Do not hay or graze within 14 days of ground applications. Approximate Cost: Not Available.

Biological Treatments - Several natural diseases caused by bacteria, viruses, protozoans, and fungi are being studied as biological control agents. One is available commercially.

1.) *Nosema locustae*, a protozoan, is commercially available and is mixed with a bait. It reduces vigor and decreases egg-laying activity. It can also be transmitted through the eggs to offspring. It is not a good choice if immediate control is necessary. However, it may be helpful in areas with chronic problems. Approximate Cost: Not Available.

D. Land Use Type: Woodlands and Tree Plantings - Zone J

1. Pest Category: Perennial and Biennial Broadleaf Weeds

Target Species: Absinth Wormwood, Canada Thistle, Musk Thistle, Field Bindweed and Leafy Spurge. Species descriptions can be found in Section A.2.

Management Alternatives: The presence of planted trees and native woodlands in areas infested with noxious weeds present a challenge in controlling the weeds. Trees are often very sensitive to the same chemicals used for weed control.

Chemical Treatments - Roundup, 2,4-D amine, Landmaster, and Krenite are labeled for use near trees, but care will be needed to avoid spraying the trees, especially new plantings.

1.) **Roundup (glyphosate)** - Roundup is labeled for use in tree plantings at a rate of 1-6 pints/acre, but it is a non-selective herbicide and tree damage can result from careless spraying or drift. Spray may contact the hardened, mature bark of trees. Roundup will also kill grasses as well as broad leafed weeds. This is not a good selection for native woodlands. Approximate Cost: \$35 -\$45 per gallon.

- 2.) **2,4-D amine** - 2,4-D may be used in plantings greater than one year old and in vigorous condition. Deciduous trees are very sensitive, so care must be taken to insure spray or drift does not contact foliage. Use low pressure, coarse spray droplets and apply in calm weather only. May be used to spray around the edges of wood draws or native woodlands if care is taken to avoid drift. Approximate Cost: \$12 - \$18 per gallon.
- 3.) **Landmaster BW or Campaign (Glyphosate + 2,4-D)** - Landmaster may also be applied safely in tree plantings at a rate of 54 oz. per acre to control leafy spurge during seed-set.. It may not be applied to the same area in two consecutive years. Care is needed to avoid spraying foliage. It should not be used in woody draws and native woodlands. Approximate Cost: \$16 per gallon.
- 4.) **Krenite S (fosamine)** - Krenite is the environmentally safest selection for control of leafy spurge around trees and woodlands. It may be used in areas with a high water table or seasonally flooded. Care is needed to avoid spraying foliage. Krenite S is labeled for chemical pruning. Therefore spray contact with foliage will only damage the portion of the tree sprayed, but will not kill the entire tree. Approximate Cost: \$60 per gallon.
- 5.) **Stinger (clopyrailid)** - Clopyrailid may be safely applied near conifers which have been transplanted at least a year. Care is needed to avoid spraying foliage. Approximate Cost: \$480 per gallon.

Cultural Treatments

- 1.) **Mowing** - Mowing is a viable method of suppressing weeds around planted trees. However, the stem density and terrain of natural woodlands preclude its use in these areas. Repeated mowing will reduce thistle infestations, particularly of biennials by preventing seed production. Mowing for several years will reduce root vitality and inhibit spurge from spreading from lateral roots. Monitoring is needed to determine when mowing should be done. Most perennial weeds will not be eliminated using only this method. Seeding a desirable ground cover after trees become established will reduce weedy vegetation in these areas. Obstacles such as rocks and steep terrain will limit the use of this method.

Biological Treatments - The biological control agents listed in Section A.2. are suitable for use in woodlands and tree plantings.

2. Pest Category: Vertebrates

Target Species: Beaver (*Castor canadensis*).

Threshold for treatment: Damage to desirable trees and shrubs in and around public use areas. Also, when there is danger to roads or facilities.

Objectives for Control: Protect woodlands and planted trees near cabin sites and recreation areas from damage or removal by beavers.

Management Alternatives: Physical removal of beavers by shooting and/or trapping will achieved management objectives. Beavers have not caused extensive problems at Belle Fourche Reservoir and control has only been needed periodically.

E. Land Use Type: Developed Recreation Areas and Areas near Residential Developments - Zone K

1. Pest Category: Perennial and Biennial Broadleaf Weeds

Objectives for Treatment of Weeds: In addition to the management objectives listed in Section A.2., maintaining a quality, recreational experience becomes important in areas of high public use.

Target Species: Absinth Wormwood, Canada Thistle, Musk Thistle, Field Bindweed and Leafy Spurge. Species descriptions can be found in Section A.2. Purple loosestrife may be added to this list as it is grown in residential gardens as an ornamental and will most likely escape into adjacent lands.

Management Alternatives: Management Alternatives are limited in these areas due to high public use.

Chemical Treatments - Chemical treatment of weeds near high use recreation areas, cabin lots, residential areas will be posted with the chemical name, date and time of chemical application, and any restricted entry interval stated on the label. Selection of chemicals will be based on land-use guidelines found on previous pages.

Cultural Treatments

- a.) **Mowing** - The campgrounds and grassy areas around many of the recreational facilities are kept mowed to improve the areas for recreational activities and for fire prevention. This mowing also keeps the weeds short and prevents them from going to seed.

- b.) **Seeding Desirable Vegetative Cover** - Seeding an appropriate grass and/or forb mix after ground disturbance for recreational improvements or other construction is imperative to preventing perennial weeds from becoming established. Clipping annual weeds six to eight inches above the ground will reduce competition for moisture and facilitate grass establishment. Seeding is best completed before June 1st or after August 15th. These seeding dates are general recommendations and may vary due to weather conditions and species selected in the seed mix. Recommendations for the mix selected should be obtained prior to seeding. Plateau herbicide may be useful in providing weed control while new vegetation is establishing. It is labeled for prairie restoration and wildflower establishment. See description in Section F.1.

2. **Pest Category: Invertebrates**

Target Species: Flies, hornets, and wasps

Threshold for Treatment: Flies, hornets, and wasps will be controlled in all garbage containers. One wasp nest in any public facility will be treated.

Objectives for Treatment: Control flies and wasps around garbage containers and other public use facilities.

Management Alternatives:

Chemical

- 1.) **Manular** - Application rate is 2 oz. per 10 square feet in garbage cans and dumpsters.
- 2.) **Flying Insecticide Spray** - Spray into entrance of wasp nests. Works best while temperatures are cooler in morning or evening hours. Remove wasp nests after activity ceases.

F. **Land Use Type: Other - Maintenance and Storage Facilities, and Special Uses - Zone L**

1. **Pest Category: Perennial and Biennial Broadleaf Weeds**

Target Species: Absinth Wormwood, Canada Thistle, Musk Thistle, Field Bindweed and Leafy Spurge. Species descriptions can be found in Section A.2.

Management Alternatives: Previously listed treatments may be effectively used for this land use type.

Chemical Treatments - In addition to chemicals previously mentioned in this plan, Plateau has the potential to be useful in several different situations. Close attention needs to be paid to the agricultural restrictions on the label.

1.) Plateau (imazapic) - Plateau is labeled for lands not used for crops or forage production. Vegetation treated with this chemical may not be grazed or cut for hay. It is primarily for use in industrial areas, roadsides, right-of-ways and recreational turf for weed control and turf height suppression. However, more specialized uses have been developed, like native prairie restoration and wildflower establishment. Plateau has also been shown to be very effective in controlling leafy spurge. Best results if applied at 8 oz. per acre in the fall, followed by 4 oz. per acre in the spring. May also apply 12 oz. per acre in the fall, but no more than 12 oz. per acre per year should be applied. A methylated seed oil adjuvant (2 pints per acre) and nitrogen fertilizer (2 pints per acre) should be added to improve the effectiveness of the herbicide. Do not spray near water or beneath the drip line of desirable trees or shrubs. Approximate Cost: \$2.00 per ounce.

Cultural Treatments

- a.) **Mowing** - Land around the maintenance facilities are kept mowed to improve use of the area and for fire prevention. Mowing also keeps the weeds short and prevents seed maturity and dispersal.
- b.) **Seeding Desirable Vegetative Cover** - Seeding an appropriate grass and/or forb mix after ground disturbance for recreational improvements or other construction is imperative to preventing perennial weeds from becoming established. Clipping annual weeds six to eight inches above the ground will reduce competition for moisture and facilitate grass establishment. Seeding is best completed before June 1st or after August 15th. These seeding dates are general recommendations and may vary due to weather conditions and species selected in the seed mix. Recommendations for the mix selected should be obtained prior to seeding. Plateau herbicide may also be useful in providing weed control while new vegetation is establishing. It is labeled for prairie restoration and wildflower establishment.

2. Pest Category: Invertebrates

Target Species: Flies, hornets, and wasps- Management Objectives and treatment thresholds are the same as in section E.2.

Management Alternatives: Management alternatives are the same as described in section E.2.

3. Pest Category: Vertebrates

Target Species: Mice

Threshold for Treatment: Any evidence of mice inhabiting the maintenance shop or other buildings.

Objectives for Treatment: To control mice inside maintenance buildings to prevent rodent damage and to protect staff and other from rodent carried diseases such as hanta virus.

Management Alternatives:

Mechanical Treatments

1.) **Trapping** - Snap traps or sticky traps will be used to kill mice.

Chemical Treatments

1.) **Poison bait** - Care should be taken to place bait where it will not cause incidental poisoning of pets or children.

INTEGRATED PEST MANAGEMENT

Integrating several management techniques often results in more effective pest control. The use of mowing to prevent seed production and to stimulate new growth often improves the effectiveness of herbicide applications. Rotating pesticides with different modes of action helps prevent the development of pesticide resistance in weed species. Optimizing the timing of pesticide applications for the most vulnerable period of the pest's life cycle increases control. Using preemptive techniques and monitoring prevents pests from reaching outbreak levels. It is more cost effective to prevent the establishment of noxious weeds by treating small patches or seedlings, rather than attempting to control an established infestation. Newly disturbed areas are prime locations for noxious weeds to begin establishing. These areas should be planted to desirable vegetation as soon as possible after being disturbed. Finally, biological control agents often take several years to effectively reduce a large population of weeds. Chemicals and other control measures are necessary to prevent the continued spread of a pest during this establishment period.

Specific plans for integrated management have been developed for leafy spurge and Canada thistle. Most of the remaining pests have been incidental in nature and will be treated as the need arises.

A. Canada and Musk Thistles

Prevention is the best control method for both perennial and biennial thistles. Thistles often invade overused or disturbed land. Disturbed areas should be reseeded to desirable vegetation as soon as possible. Seed mixtures used for revegetation should be free of noxious weed seed. Grazing management is an important component of thistle control in pastures and rangeland. Overgrazing weakens desirable plant species, making a pasture more susceptible to invasion. Pastures protected from overgrazing through proper grazing management and rotational grazing practices have fewer problems with thistle establishment.

Chemical control either in the spring before bolting occurs or in the fall provides effective treatment for both Canada and musk thistles while plants are in their rosette growth form. If the timing for a spring application is missed, mowing can effectively prevent seed production (if completed before flowers start showing color) until a herbicide is applied in the fall. Rotation of chemicals will help prevent the development of herbicide resistance.

The biological control agents described in Section A.2. have reduced thistle populations in some areas. However, they are slow in becoming established and may take up to ten years to build a high enough population to achieve effective control. The thistle head weevil and thistle crown weevil are more effective if introduced together in the same area. The Canada thistle stem weevil larvae feed on the stem, root crown and roots of the plant and weaken it to the point that it winter kills. Often a fall herbicide application is needed to obtain effective control.

B. Leafy Spurge

To date, flea beetles have shown the most promise for long term control of leafy spurge. Integrating the introduction of flea beetles with other management techniques can add to the effectiveness of a program and inhibit further spreading of this weed while the beetles become established. Haying or burning an area in the fall or spring preceding the release will remove excess litter and improve conditions for establishing flea beetle colonies. If haying is done, care should be taken not to spread spurge into new areas. Spraying of herbicides along the perimeters of infestations inhibit further spreading of leafy spurge while beetles become established. Do not spray the release site. The herbicide will not kill the beetles, however by killing the top growth of spurge plants, the food supply for the adults will be eliminated. As beetle populations increase, they may be collected and released in other areas. Herbicide use should decline as populations of flea beetles spread and expand.

The need for chemicals and/or mowing is expected to continue to control spurge in new or smaller infestations which are not large enough to support a flea beetle colony. The selection of chemicals will be based on land-use and environmental sensitivity of an area as described earlier. Where possible, chemical use should be rotated. Alternating the use of

Landmaster with a Tordon + 2,4-D tank mix every other year has shown promise in effectively controlling leafy spurge.

If they are available, sheep or goats may also be used control spurge in sensitive or inaccessible areas.

RECLAMATION AERIAL PESTICIDE APPLICATION POLICY

Reclamation Policy Change on Aerial Pesticide Applications: Public notification is required prior to aerial pesticide applications on Reclamation lands. Notices may consist of simple information signs on field gates or fence lines. It is recommended that public announcement be made through appropriate media services for applications in areas of significant public use. Public notices should include the following:

- (a) Date of proposed application(s)
- (b) Location of application site(s)
- (c) Pesticide to be applied
- (d) Name and phone number of point of contact for additional information

References

- Carpenter, A.T. and T.A. Murray. 1999. *Element Stewardship Abstract for Bromus tectorum L.* The Nature Conservancy's Wildland Weeds Management Program. <http://tncweeds.ucdavis.edu/esadocs/documnts/bromtec.pdf>.
- Conway, K., J. Sirota, and S. Rose. 2003. *Tamarisk (Tamarix spp.)* Colorado State University Cooperative Extension. <http://www.colostate.edu/Depts/CoopExt/TRA/PLANTS/tamarisk.html>.
- Glogoza, P. 1995. *Common Insect Pests of Trees and Shrubs in North Dakota*. Fargo, ND: NDSU Extension Service. (E-296)
- Haferkamp M.R. and M.G. Karl. 1998. *Clipping Effects on Growth Dynamics of Japanese Brome*. <http://www.nalusda.gov/ttic/tektran/data/000009/04/0000090439.html>.
- Integrated Weed Control. 2003. *Integrated Weed Control: Biological Products and Consulting Services for Weed Management*. Bozeman, MT.
- Lym, R.G., C.G. Messersmith, and A.G. Dexter. 1994. *Absinth Wormwood Control*. Fargo, ND: NDSU Extension Service. (W-838)
- Lym, R.G., C.G. Messersmith, and R. K. Zollinger. 1998. *Leafy Spurge Identification and Control*. Fargo, ND: NDSU Extension Service. (W-765 (Revised))
- Lym, R.G., and D.E. Peterson. 1989. *Leafy Spurge (Euphorbia esula L.)*. Fargo, ND: NDSU Extension Service. (W-866)
- Lym, R.G., and R. K. Zollinger. 1995. *Integrated Management of Leafy Spurge*. Fargo, ND: NDSU Extension Service. (W-866)
- Lym, R.G., and R. K. Zollinger. 1995. *Perennial and Biennial Thistle Control*. Fargo, ND: NDSU Extension Service. (W-799)
- Masters, R.A. and S.J. Nissen. 1998. Revegetating Leafy Spurge (*Euphorbia esula*)-infested Rangeland with Native Tall Grasses. *Weed Technology* 12(2):381-390.
- McBride, D.K., M.J. Weiss, and W.D. Valovage. 1990. *Grasshopper Biology and Management*. Fargo, ND: NDSU Extension Service. (E-272)
- North Dakota Biological Control Committee. 1998. *Biological Control of Leafy Spurge Using Flea Beetles*. Compiled by D. Nelson and D. Hirsch.
- North Dakota Biological Control Committee. 1998. *Leafy Spurge Biocontrol Programs Using Flea Beetles For Trainers and Implementers*. Compiled by D. Nelson and D. Hirsch.
- NDSU Extension Service. 1998. *1998 North Dakota Weed Control Guide*. Compiled by R. K. Zollinger. Fargo, ND: NDSU Extension Service. (W-253)
- NDSU Extension Service. 1999. *1999 North Dakota Weed Control Guide*. Compiled by R. K. Zollinger. Fargo, ND: NDSU Extension Service. (W-253)
- South Dakota Department of Agriculture. 2003. *The Salt Cedar Menace*. Pierre, SD: South Dakota Department of Agriculture: Division of Agricultural Services.
- Western Society of Weed Science. 1996. *Biological Control of Weeds of the West*. Ed by Norman E. Rees, et. al. Bozeman, MT: Western Society of Weed Science.
- Whisenant, S.G. 1990. Postfire Population Dynamics of *Bromis japonicus*. *American Midland Naturalist*, 123:301-308.

- Whitson, T.D., M.E. Majerus, R.D. Hall, and J. D. Jenkins. 1997. Effects of Herbicides on Grass Seed Production and Downy Brome (*Bromus tectorum*). *Weed Technology* 11:644-648.
- Zollinger, R. K., and V. Quam. 1997. *Weed Control in Tree Plantings*. Fargo, ND: NDSU Extension Service. (W-1097)
- Zollinger, R. K., and Rodney G. Lym. 1992. *Identification and Control of Field Bindweed*. Fargo, ND: NDSU Extension Service. (W-802)

APPENDIX F

SCIENTIFIC NAMES OF PLANTS AND ANIMALS USED IN THE DOCUMENT

Common Name	Scientific Name
Mammals	
American pronghorn	<i>Antilocapra americana</i>
beaver	<i>Castor canadensis</i>
big brown bat	<i>Eptesicus fuscus</i>
black-footed ferret	<i>Mustela nigripes</i>
black-tailed prairie dog	<i>Cynomys ludovicianus</i>
bobcat	<i>Felis rufus</i>
cottontail	<i>Sylvilagus sp.</i>
coyote	<i>Canus latrans</i>
deer mouse	<i>Peromyscus maniculatus</i>
mountain lion	<i>Felis concolor</i>
muskrat	<i>Ondatra zibethicus</i>
mule deer	<i>Odocoileus hemionus</i>
plains pocket gopher	<i>Geomys bursarius</i>
raccoon	<i>Mustela nigripes</i>
white-tailed deer	<i>Cynomys ludovicianus</i>
Birds	
bald eagle	<i>Haliaeetus leucocephalus</i>
black tern	<i>Chlidonias niger</i>
blue-winged teal	<i>Anas discors</i>
cliff swallow	<i>Hirundo pyrrhonota</i>
mallard	<i>Anas platyrhynchos</i>
great white pelican	<i>Pelecanus erythrorhynchos</i>
sandhill crane	<i>Grus canadensis</i>
Wilson's phalarope	<i>Phalaropus tricolor</i>
giant Canada goose	<i>Branta canadensis</i>
herring gull	<i>Larus argentatus</i>
Hungarian partridge	<i>Perdix perdix</i>
sharp-tailed grouse	<i>Tympanuchus phasianellus</i>
morning dove	<i>Zenaida macroura</i>
sage grouse	<i>Centrocercus urophasianus</i>
pheasant	<i>Phasianus colchicus</i>
red-winged blackbird	<i>Agelaius phoeniceus</i>
osprey	<i>Pandion haliaetus</i>
mountain bluebird	<i>Sialia currucoides</i>
lark bunting	<i>Calamospiza melanocorys</i>
horned lark	<i>Eremophila alpestris</i>
grasshopper sparrow	<i>Ammodramus savannarum</i>
western meadowlark	<i>Sturnella neglecta</i>
chestnut-collared larkspur	<i>Calcarius ornatus</i>
sage thrasher	<i>Oreoscoptes montanus</i>
sage sparrow	<i>Amphispiza belli</i>
whooping crane	<i>Grus americana</i>
western grebe	<i>Aechmophorus occidentalis</i>
Fish	
walleye	<i>Stizostedion vitreum</i>
largemouth bass	<i>Micropterus salmoides</i>

Common Name	Scientific Name
rainbow trout	<i>Oncorhynchus mykiss</i>
spot-tailed shiner	<i>Notropis hudsonius</i>
gizzard shad	<i>Dorosoma cepedianum</i>
Amphibians and Reptiles	
northern leopard frog	<i>Rana pipiens</i>
western painted turtle	<i>Chrysemys picta bellii</i>
bullsnake	<i>Pituophis catenifer</i>
western plains garter snake.	<i>Thamnophis radix</i>
Plants	
cattail	<i>Typha latifolia</i>
willow	<i>Salix sp.</i>
smartweed	<i>Polygonum sp.</i>
coontail	<i>Ceratophyllaceae demersum</i>
elodea	<i>Elodea sp.</i>
big sagebrush	<i>Artemisia tridentata</i>
western wheatgrass	<i>Pascopyrum smithii</i>
blue grama	<i>Boutelous gracilis</i>
green needlegrass	<i>Stipa viridula</i>
porcupine grass	<i>Stipa spartea</i>
needle and thread	<i>Stipa comata</i>
little bluestem	<i>Schizachyrium scoparium</i>
buffalograss	<i>Buchloe dactyloides</i>
Canada thistle	<i>Cirsium arvense</i>
musk thistle	<i>Carduus nutans</i>
creeping Jenny	<i>Convolvulus arvensis</i>
cheatgrass	<i>Bromus tectorum</i>
Japanese brome	<i>Bromus japonicus</i>
salt cedar	<i>Tamarix ramosissima</i>
big bluestem	<i>Andropogon gerardii</i>
prairie cordgrass	<i>Spartina pectinata</i>
switchgrass	<i>Panicum virgatum</i>
Baltic rush	<i>Juncus balticus</i>
green ash	<i>Fraxinus pennsylvanica</i>
cottonwoods	<i>Populus deltoides</i>
coyote willow	<i>Salix exigua</i>
ponderosa pine	<i>Pinus ponderosa</i>
buffalo berry	<i>Shepherdia argentea</i>
skunkbrush sumac	<i>Rhus aromatica</i>
sand cherry	<i>Prunus besseyi</i>
rose	<i>Rosa sp.</i>
plum	<i>Prunus sp.</i>
juniper	<i>Juniperous scopulorum</i>
chokecherry	<i>Prunus virginiana</i>
Russian olive	<i>Elaeagnus angustifolia</i>
bur oak	<i>Quercus macrocarpa</i>
hawthorn	<i>Crataegus chrysocarpa</i>

APPENDIX G

FIRE MANAGEMENT PLAN OUTLINE

Belle Fourche Reservoir Fire Management Plan Outline

The following is a list of items that will be included in a fire management plan for Belle Fourche Reservoir. If additional items are identified, they will be added to the plan.

Preparedness

- Contacts
- Equipment
- Cooperative agreements

Response, Dispatch and Notification

- Responsibility
- Fire districts in charge
- Fire management strategies, tactics, and alternatives.
 - Routes of access and existing fire breaks
 - Equipment needed (aircraft, tools, engines etc.) and how to gain access to the equipment.

Prevention

- Fire restrictions
- Off road travel

Prescribed fire plans

- Resource management objectives for controlled burns.

Public Safety and Health during wildfire or controlled burn

- Recreational users
- Firefighters
- Adjacent landowners/permit holders.
- Motorists (smoke on highway, road closures)

Air & Water Quality

- State and federal air quality restrictions and permits required.
- Filters to protect water from erosion after fire.

Resource Protection

- Endangered and threatened species
- Cultural resources

Restoration Plans after wildfire

- Habitat (plowed or dozer firebreaks, tree plantings)
- Facilities (fences, buildings)
- Response to invasive and noxious weeds after fire.

APPENDIX H

NEWSLETTERS

BELLE FOURCHE RESERVOIR

RESOURCE MANAGEMENT PLAN NEWSLETTER

Volume 1

Fall 1999

Reclamation initiates Management Plan and Requests Input

WE NEED YOUR HELP!

The Dakotas Area Office of the U.S. Bureau of Reclamation (Reclamation) has begun work on a Resource Management Plan (RMP) for Belle Fourche Reservoir. The plan will be prepared by Reclamation's Rapid City Field Office (RCFO), which in western South Dakota is responsible for management of lands around Angostura, Belle Fourche, and Shadehill Reservoirs.

RMPs are plans used by Reclamation and its managing partners to guide management of lands surrounding Reclamation reservoirs. Reclamation is directed to accomplish land management with a federal, state or local managing partner. RMPs provide a blueprint for managing recreation, wildlife habitat, vegetation, roads, cultural resources and land leases. The RMP document will include long term management goals and objectives for Belle Fourche Reservoir and associated lands.

We need your help during the planning process to ensure that you, members of the public, have ample opportunity to express your interests, concerns, and ideas, and to review and comment on the RMP as it develops. We intend to hold open houses to better acquaint you with the process and obtain your input. Reclamation will consider any opportunities and ideas brought up by the public providing they fall within Reclamation policies and regulations.

Reclamation has determined that an (Environmental Assessment) EA will be prepared for implementation of the Belle Fourche Reservoir RMP. An EA is written for any action whose effects are undetermined and which may or may not require an Environmental Impact Statement (EIS). The EA and RMP will be combined into one document.

A draft EA/RMP will be distributed to all interested members of the public for a 30 day comment period. If the effects described in the EA are not found to be significant Reclamation will issue a Finding of No Significant Impact (FONSI) along with the final EA/RMP. If the effects are found to be significant, Reclamation will prepare an EIS.

The overall purpose of an RMP is to foster proper stewardship of public lands. RMPs enable managers to make land use and resource management decisions that are consistent with overall management objectives and the needs of the public. They assist land managers in minimizing conflicts among users, in following environmental and cultural resource objectives, federal law, agency policies and guidelines, and in obtaining public support for the management of public resources.

PROJECT BACKGROUND

The Belle Fourche Unit is located in Butte and Meade counties of western South Dakota northeast of the Black Hills and about 25 miles east of the Wyoming-South Dakota State border.



Belle Fourche Reservoir
Photo: Jerry Leggate, USBR

The Belle Fourche Project was authorized for construction in 1904. The Project was reauthorized as the Belle Fourche Unit of the Pick-Sloan Missouri basin Program in 1983 under Public Law 98-157. This Act also provided construction appropriations for rehabilitation and betterment of irrigation facilities, recreation, and fish and wildlife.

The Unit is one of Reclamation's earliest irrigation projects. The first irrigation water was delivered to project lands in 1908. The Belle Fourche Irrigation District (District) was formed in 1923.

Releases from the reservoir for irrigation range from approximately 50,000 to 120,000 acre feet per year, depending on demand.

The main features of the Unit are the Belle Fourche Diversion Dam, Inlet Canal, Belle Fourche Dam and Reservoir; North and South Canals, laterals, drains, and irrigated acres. Belle

Fourche Diversion dam is located on the Belle Fourche River about 1.5 miles northeast of the city of Belle Fourche, South Dakota. The diverted water is carried by the Inlet Canal to the Belle Fourche Reservoir.

The resource area that will be included in the EA/RMP will include the Belle Fourche River Diversion Dam lands and Belle Fourche Reservoir lands (See attached map). The RMP will not address operation of the dams, irrigation distribution facilities or lands located on the District.

There are 258 acres of land associated with the diversion dam. The Crow Creek land (86 acres) is located north of the diversion dam and includes the floodplain area near the junction of Crow Creek and the inlet canal in T9N, R2E, Sections 35, 36. The Belle Fourche land (172 acres) extends from the diversion dam south along the river to the junction of the Belle Fourche and Redwater Rivers in T9N, R2E Section 36; T8N, R2E, Sections 2, 11.

Both diversion dam parcels support woodlands and moist and dry meadows. They are not fenced from the surrounding private land.

The District issues livestock grazing permits for these lands to two neighboring landowners.

Belle Fourche Dam (known locally as Orman Dam) is an earthen dam constructed across Owl Creek, a stream tributary to the Belle Fourche River. The dam forms the Belle

Fourche Reservoir which has a water surface area of 8,040 acres and stores 192,000 acre-feet of water.

There are 6503 acres of land surrounding the reservoir located in: T8N, R3E, Section 1; T8N R4E Sections 5,6; T9N, R3E, Sections 1-5, 9-15, 23-26, 35, 36; T9N, R4E, Sections 7, 18-20, 30-32; T10N, R3E, Sections 19, 20, 29-34.

The South Dakota Department of Game, Fish, and Parks (SDGF&P) manages 350 acres on Rocky Point for recreation and 164 acres on Owl Creek below the dam for wildlife purposes. Reclamation manages 1020 acres on Gaden's Point. The District oversees 11 grazing permits on the remaining acres. The property boundary between Reclamation and neighboring private land is fenced and maintained by the District.

The reservoir lands are primarily rolling, mixed grass prairie. Cottonwood and willow are present along the reservoir shore, and several shelterbelts are being established around the reservoir. Recreation developments are limited to one two-lane boat ramp, 6 pit toilets, and a network of gravel roads and two-track dirt trails.



Rocky Point Boat Ramp
Photo: Jerry Leggate, USBR

PLANNING PROCESS SCHEDULE

The RMP planning process for the fall and winter of 1999 will focus on:

- 1) issues and opportunities
- 2) goals and objectives

Public open houses are scheduled to be held in January 2000. Beginning in February 2000, the planning effort will shift to:

- 1) the development of alternative management proposals
- 2) preparation of the EA/RMP

A draft EA/RMP is scheduled to be released to the public for review and comment by October 2000.

PUBLIC INVOLVEMENT PROGRAM

Newsletters

Newsletters will be sent to everyone on our mailing list, and will also be distributed around the local area. The purpose of these newsletters is to keep you informed of the RMP progress and to provide opportunities for you to participate. Up to four newsletters are proposed.

Public Open Houses

The open houses will be information sharing meetings, held in several locations in order to maximize attendance. These open houses will be designed to provide background information on the RMP, and identify additional issues, concerns and opportunities. Maps and photographs

of the project area will be available. A list of issues will be provided to inform you of planning constraints. You will be asked to comment on these issues and provide any additional issues or concerns.

The locations and dates are as follows:

January 10, 2000- Spearfish Holiday Inn and Convention Center- Spruce Room

January 11, 2000- Rapid City Ramkota Hotel and Convention Center- Sylvan I Room

January 12, 2000- Newell Royal Oak Restaurant

January 13, 2000- Belle Fourche Community Center- Dakota Room

These will be held in an informal setting and you may visit the open houses any time between **4:00 PM to 9:00 PM.**

PLEASE COMMENT

We would appreciate your comments on the following issues/and or resource uses of the reservoir: livestock grazing, noxious weeds, soil erosion, reservoir road access, wildlife management, wetlands, fisheries, cultural and historic sites, fencing, camping, restrooms, special uses, day use, boating, law enforcement, parking, irrigation use, off- road vehicle use, and health and safety. This is a preliminary list only, intended to encourage discussion; feel free to add issues, concerns and opportunities.

Your comments will be used to refine issues, opportunities and concerns that will be presented in the open houses. If you will not be attending one of the open houses, please use this opportunity to provide us with your input. A

comment form is attached for your use.

Comments or questions may be submitted to:

Faye Streier
U.S. Bureau of Reclamation
Rapid City Field Office
515 9th Street, Room 101
Rapid City, SD 57701
(605)394-9757 Ext. 3005
fax: (605)394-9346
e-mail:
FSTREIER@GP.USBR.GOV

BELLE FOURCHE RMP COMMENTS

Name: _____

Date: _____

Address: _____

Please check all that apply:

- Please take me off your mailing list
- Enclosed are my comments
- I would like to remain on/be added to your mailing list

Write Comments here or attach another sheet:

Return to:
Faye Streier
USBR Rapid City Field Office
515 9th Street
Room 101
Rapid City, SD 57701



BELLE FOURCHE RESERVOIR

RESOURCE MANAGEMENT PLAN NEWSLETTER

Volume 2

Winter 2000

Resource Management Plan Underway

About our Newsletter

This is the second Belle Fourche Reservoir Resource Management Plan (RMP) newsletter.

For those of you new to our mailing list, the U.S. Bureau of Reclamation (Reclamation) has begun work on a Resource Management Plan (RMP) for Belle Fourche Reservoir. The plan is being prepared by Reclamation's Rapid City Field Office (RCFO). The RMP will be a document used by Reclamation and it's managing partners to guide land management at Belle Fourche (Orman) Reservoir.

These newsletters are being sent to keep you informed on the progress of the RMP.

Thank You For Your Comments!

In November 1999 we mailed our first newsletter, along with a letter requesting input, to over 500 individuals, organizations, agencies, and governments. In the newsletter, we included a mail-in comment form. We received 44 written and telephone responses as a result of this request for input.

In January 2000, we held a series of Open Houses in Spearfish, Rapid City, Newell and Belle Fourche. A total of 79 people attended these open houses. We received 55 responses at the open houses. The following is a breakdown of attendance:

- January 10- Spearfish -----21
- January 11- Rapid City-----12
- January 12- Newell-----14
- January 13- Belle Fourche -32



Members of the public visit with Reclamation staff during the Spearfish Open House

Public Comment Period Provides Valuable Information.

We have gathered and summarized all of your responses to our request for comments. Since many people commented on more than one subject, we received a total of 316 comments! They have been grouped into general issue categories, with subcategories within them. When a comment related to several categories, it was placed under each one.

It is important to remember that the subcategories are not listed in order of importance. The issues of concern that we received comments on are listed below.

***Note - Keep in mind that these have not been adopted as alternatives or proposals- they are simply comments that we have received. Also, they have not yet been screened for consistency with Reclamation policy and laws.**

Development

Provide some improved facilities.

Maintain the primitive character of the reservoir with limited development.

Balance development with opportunities for a primitive experience.

Implement any new developments in phases, rather than all at once.

Recreational improvements at the reservoir could benefit the community.

Restrict any new improvements at the reservoir.

Irrigation Use

Irrigation is the primary purpose of the reservoir. Will recreation developments lead to conflicts with this use?

Is it worthwhile to invest a large amount of money in recreation improvements knowing that reservoir levels will fluctuate?

Improvements to the irrigation system will conserve more water in the reservoir.

Irrigators have large financial investment in the irrigation project. The project is of great economic importance to the region.

Fees

Most people do not object to paying a fee for some improvements, however, there was concern that not all users could afford fees.

Keep fees low to allow for broad use.

Consider a one time seasonal entrance fee with free camping. Allow primitive camping to remain.

Road System

A need was expressed for improvements to the road system and condition.

There is interest in a paved road to the boat ramp.

Some people feel that the road system is adequate or road improvements will lead to increased use or possible problems.

Law Enforcement

The majority of comments were in favor of increased law enforcement or regulations to prevent littering, provide visitor safety, prevent under age drinking, regulate campsite occupation and prevent illegal activities.

Some felt that additional regulations are not needed.

Recreation/Camping

Allow group camping.

Should a reservation and/or time limit system be used for camping?

Reservation systems can lead to monopolization of sites by a few people.

Reservations systems allow people to plan ahead.

Improve and/or add boat ramps. Provide a ramp on the east side of the reservoir to protect from winds.

Continue holding July 3rd fireworks at reservoir.

Find a solution to jet ski users who are not courteous to other boaters.

Can these recreation improvements be provided? day use area, electricity, water, concession, developed campground, designated campsites, fish cleaning station, State Park, better parking at boat ramp, horse riding area, showers, firegrates, marina, swimming area.

Reservoir Access

The shoreline and reservoir should remain open to public use.

Access in some areas should be restricted to protect resources and other land uses such as livestock grazing.

Make shoreline and facilities accessible to the elderly and disabled.

Sanitation/Litter

Litter clean-up needs to be improved.

More restrooms and an RV dump station are needed.

Volunteers could be used for litter clean-up.

Land Uses

Should ORV use be restricted?

Eliminate or reduce livestock grazing.

Continue or increase livestock grazing.

Assess the benefits of livestock grazing.

Recreation is conflicting with livestock grazing and should be restricted in some areas.

Wildlife habitat should be improved.

Establish a walk-in wildlife area.

Preserve the scenic beauty of the reservoir.

Indian Trust Assets

Recognize potential impacts of Federal water projects on Native American reserved water rights.

General Resource Management

Increased developments will increase pressure on the fishery.

Erosion that occurs at the reservoir is primarily the result of natural wave action.

Tall grass is potential fire hazard. Restrict hunting and driving during extreme dry periods.

Do not adopt changes in land use that affect the water quality of the Belle Fourche River.

Increase public education about littering and regulations.

Maintain current relationships with managing partners.

What is the Next Step?

We will develop broad objectives for land management at the reservoir. Objectives are goals, or end points that we will strive to achieve at the reservoir. These objectives will be based on issues, opportunities, authorized uses of the reservoir and Reclamation laws and policies. An example of an objective might be "Ensure the safety of all users by enforcing applicable laws and rules."

When objectives have been identified, Reclamation will develop alternatives, or different ways of achieving these objectives. These alternatives, along with the analysis of their effects, will be presented in the Draft Environmental Assessment for the RMP.

We are assembling a work group to help us develop objectives. We would like this group to include a representative from managing partners (Belle Fourche Irrigation District, South Dakota Department of Game, Fish and Parks, and Butte County), grazing permittees, interested governments, and members of the public with an interest in management at the reservoir.

Specifically, we would like one or two

representatives who are interested in recreation management (such as camping, boating, and day use) at the reservoir. We would also like to include a representative with an interest in hunting and fishing at the reservoir.

If you have an interest in serving on this group to represent recreation or hunting/fishing interests, or would like to recommend someone as a representative, please contact us at the address below.

In order to make the process as efficient as possible, the group will be small, with approximately 10 members. We anticipate that the group will meet one or two times.

Faye Streier
U.S. Bureau of Reclamation
Rapid City Field Office
515 9th Street, Room 101
Rapid City, SD 57701
(605)394-9757 Ext. 3005
fax: (605)394-9346
e-mail: FSTREIER@GP.USBR.GOV

Our Next Newsletter

In our next newsletter, we will report on the objectives and alternatives developed for the reservoir. We will also provide information on how to obtain a copy of the Draft Environmental Assessment for review.

If you no longer wish to receive this newsletter, please notify us at the above address and we will remove your name from our mailing list.



BELLE FOURCHE RESERVOIR

RESOURCE MANAGEMENT PLAN NEWSLETTER

Volume 3

Winter 2002

RMP Alternatives Ready for Your Review

Status of the Planning Process

This is the third Belle Fourche Reservoir Resource Management Plan (RMP) newsletter.

For those of you new to our mailing list, the U.S. Bureau of Reclamation (Reclamation) has been in the process of developing a Resource Management Plan (RMP) for Belle Fourche Reservoir. The plan is being prepared by Reclamation's Rapid City Field Office (RFCO). We are planning to release a draft Resource Management Plan (DRMP) in mid-winter.

The purpose of this newsletter is to inform you of the upcoming release of the draft Resource Management Plan (DRMP) for Belle Fourche Reservoir in mid-winter. Attached to this newsletter is a postcard you will need to fill out and **return to us by December 28th, 2001**, so we can provide you with the DRMP in the best way possible. The document will also be available for review in the following locations:

- BELLE FOURCHE PUBLIC LIBRARY
905 5th Ave.
Belle Fourche, South Dakota
- BLACK HILLS STATE UNIVERSITY
EY BERRY LIBRARY
1200 Universtiy Street
Spearfish, South Dakota
- DEADWOOD PUBLIC LIBRARY
435 Williams Street
Deadwood, South Dakota

- GRACE BALLOCH MEMORIAL LIBRARY
625 5TH Street
Spearfish, South Dakota
- NEWELL CITY LIBRARY
208 Girard Ave.
Newell, South Dakota
- PHOEBE APPERSON HEARST FREE LIBRARY
315 W. Main Street
Lead, South Dakota
- SOUTH DAKOTA SCHOOL OF MINES & TECHNOLOGY
DEVEREAU LIBRARY
501 E. ST. Joseph Street.
Rapid City, South Dakota
- STURGIS PUBLIC LIBRARY
1040 Second Street
Sturgis, South Dakota

Reclamation Team Pleased with Work Group Attendance

As mentioned in the second newsletter, we assembled a working group to develop objectives based on issues, opportunities, authorized uses of the reservoir and Reclamation laws and policies. Alternatives were developed to meet the objectives, and these alternatives will be presented in the RMP.



BELLE FOURCHE RESERVOIR

RESOURCE MANAGEMENT PLAN NEWSLETTER

Volume 3

Winter 2002

In the spring of 2001, the Reclamation team met with a working group composed of managing partners at the reservoir and members of the public with a strong interest in recreation, fish and wildlife management at the reservoir. The group included representatives from:

- Belle Fourche Irrigation District
- South Dakota Game Fish & Parks
- Butte County Commissioners
- Adjacent Landowners
- Interested Recreationalists

This group met two times to help us identify broad goals for management at the reservoir. These goals are based on public input and issues that have been identified for the reservoir. The group also helped to identify some draft land use zones for the reservoir. Land use zones are areas that emphasize a specific use, or group of uses: such as developed recreation or wildlife habitat. The goals focus on protecting the authorized purposes and natural resources of the reservoir, retaining the rural character fo the reservoir, and providing services to allow for the increased recreational use. The Reclamation team then worked on developing alternative ways of achieving these goals.

April Workshop A Success!

This open house was a big success; 89 people attended and we received many comments on the alternatives. A wide variety of comments were received on all of the alternatives displayed to the public at the workshop. This

assured the Reclamation team that we had an appropriate range of alternatives. We used comments to make adjustments to the draft alternatives.



Members of the public look over draft Alternatives at open house in Belle Fourche in April 2001

Land Use Categories

In developing the RMP alternatives, several land use categories were defined to help describe the management prescriptions for different portions of the Belle Fourche Reservoir. Land use categories are like zoning, they identify specific uses for lands at the reservoir.

Land Use Categories for Belle Fourche Reservoir

- Developed Recreation Area (with and without utilities)
- Primitive Recreation Area (motorized)
- Wildlife Management Area (partial non-motorized) camping is not permitted
- Day Use Area
- Administrative Area



BELLE FOURCHE RESERVOIR

RESOURCE MANAGEMENT PLAN NEWSLETTER

Volume 3

Winter 2002

Land Use Category 1: Developed Recreation (with or without utilities)

- Reduction of wildfire hazard
- Providing shade and privacy
- Retaining durable, drought resistant ground cover
- Promoting shoreline wood species
- Preserving aesthetics

Land Use Category 2: Primitive Recreation Area (motorized)

- Reduction of wildfire hazard
- Promote healthy sagebrush communities.
- Improve and promote riparian habitat.
- Manage grasslands for diversity, structure and cover.
- Protect fragile shale soils.
- Promote woody draws and shoreline woody species.
- Reduce impacts to native vegetation by concentrating primitive camping and regulating road access
- Minimize conflicts between hunters and livestock.

Land Use Category 3: Wildlife Management Area (partial non-motorized)

- Reduction of wildfire hazard
- Promote healthy sagebrush communities and manage for wildlife species requiring sagebrush.
- Improve and promote riparian habitat.
- Manage grasslands for diversity, structure and cover.

- Protect fragile shale soils.
- Promote woody draws and shoreline woody species.
- Retain adequate cover.
- Minimize conflicts between hunters and livestock.

Land Use Category 4: Day Use

- Reduction of wildfire hazard
- Providing shade and privacy
- Retaining durable, drought resistant ground cover
- Promoting shoreline woody species
- Preserving aesthetics

Land Use Category 5: Administrative

- Reduction of wildfire hazard
- Restrict or limit public access.
- No livestock grazing is permitted.

Alternatives

The Reclamation team developed four alternatives designed to meet project purposes, resource needs, and the concerns of the public. The alternatives include:

- Alternative A: No Action
- Alternative B: Minimum Recreation Facilities
- Alternative C: Multiple Use
- Alternative D: Conservation



BELLE FOURCHE RESERVOIR

RESOURCE MANAGEMENT PLAN NEWSLETTER

Volume 3

Winter 2002

A brief description of each alternative will be given below. The No Action alternative is an alternative that prescribes no change in resource management; Alternative A. The other three alternatives are considered action alternatives, because they prescribe a change in resource management; Alternatives B, C and D.

Alternative A: No Action

The objective of this alternative is to allow current management at Belle Fourche Reservoir to continue. Under the Land Use Category the majority of reservoir area and Diversion Dam lands would be managed for primitive recreation area (motorized). Lands below Belle Fourche Dam within shelterbelt plantings, would be the wildlife management area (partial non-motorized). The administrative area would be Belle Fourche Dam and canals.

Alternative B: Minimum Recreation Facilities

This alternative would provide some improvements at the reservoir, but would be limited to by the requirements of the Federal Water Project Recreation Act. Reclamation is able to provide only the minimum facilities that are required for public health and safety. Recreation facilities on Rocky Point, which is managed with a Non-Federal partner, SDGF&P, would be allowed to expand beyond the minimum. Under the Land Use Category, the majority of lands would become a wildlife management area (partial non-motorized). A third of the total acres would be managed as a primitive recreation area (motorized).

Alternative C: Multiple Use

The objective of this alternative is to provide for developed recreation opportunities that meet current and future demands while maintaining the primitive character of much of the reservoir. This alternative would be implemented under agreement with one or more managing partners.

Alternative D: Conservation

The focus of this alternative would be to provide for maximum protection and enhancement of natural resources and the scenic qualities of the reservoir while providing very limited access and recreation opportunities. This alternative would address the following issues: Resource damage caused by off-road vehicle use and the difficulties of enforcement, the need for wildlife habitat, and Reclamation's limited ability to manage for recreation. Overnight camping would be limited to this area.

What's The Next Step?

The release of the Draft Resource Management Plan is due out in mid-winter. The public will have one month from the time of its release to make comments. Your comments are important.

APPENDIX I

DRAFT EA/RMP COMMENTS AND RESPONSES

Draft EA Comments and Responses

Thirty comment letters/communications were received during the public comment period for the draft EA. Form cards were also received from 296 members of the Belle Fourche Irrigation District. These cards were sent to Reclamation in response to a letter (#30) sent to members by the Board of Directors, urging members to support Alternative A to protect the priority of irrigation at the reservoir. Ninety-eight additional photocopied cards were received from members of the surrounding communities. The letters/communications are reproduced here, along with responses to substantive comments. Substantive comments are key comments requiring a response. Substantive comments are in brackets and are numbered in the left margin.

Table of Contents

Ron Schawans	3
Randy M. Adams	4
<i>Response to Randy Adams</i>	5
Bill Blickensderfer	6
<i>Response to Bill Blickensderfer</i>	7
Ken Edel	8
Ken Edel page 2	9
<i>Response to Ken Edel</i>	10
Thad Fitch	11
<i>Response to Thad Fitch</i>	12
Mike Klamm	13
<i>Response to Mike Klamm</i>	14
Kenny Merrell	15
<i>Response to Kenny Merrell</i>	18
Earl Capp & Sons	19
<i>Response to Earl Capp & Sons</i>	21
Sherida Riborday	22
<i>Response to Sherida Riborday</i>	23
Cecil Whitlock	24
Renel Hall-Beck- Belle Fourche Irrigation District	25
Renel Hall-Beck- Belle Fourche Irrigation District	26
<i>Response to Renel Hall-Beck- Belle Fourche Irrigation District</i>	27
Renel Hall-Beck- Belle Fourche Irrigation District	28
<i>Response to Renel Hall-Beck- Belle Fourche Irrigation District</i>	29
Mel Weyer	30
<i>Response to Mel Weyer</i>	31
Conley and Marilyn Torgrade	32
<i>Response to Conley and Marilyn Torgrade</i>	33
John and Darlene Thacker	34
<i>Response to John and Darlene Thacker</i>	35
Garland Foster	36
<i>Response to Garland Foster</i>	38
Betty & Wayne Ryan, Sr.	39
<i>Response to Betty & Wayne Ryan, Sr.</i>	40
Tim Boren	41
<i>Response to Tim Boren</i>	42
Helen Erk	43
<i>Response to Helen Erk</i>	44
Robert E. Hastings	45
<i>Response to Robert E. Hastings</i>	46

David D. Ruff	47
<i>Response to David D. Ruff</i>	51
Valerie Ryan	53
<i>Response to Valerie Ryan</i>	55
John and Jolene Ryan	56
<i>Response to John and Jolene Ryan</i>	58
Belle Fourche Economic Development	59
Black Hills Community Economic Development	60
<i>Response to Black Hills Community Economic Development</i>	61
Mary Wendt	62
<i>Response to Mary Wendt</i>	64
Wade Pehl	65
<i>Response to Wade Pehl</i>	66
South Dakota Department of Game, Fish and Parks	67
Belle Fourche Irrigators	71
<i>Response to Belle Fourche Irrigators</i>	72

RON'S PHARMACY

**Family
Thrift
Center**

600 National Street • PO Box 757 • Belle Fourche, SD 57717
(605) 892-2666 • Fax: (605) 892-2667 • 1-800-956-2676

Faye Steera

asa user of Orman Deck
area I prefer alternative

D,

Ron Schawans.

OFFICIAL FILE COPY RECEIVED		
DEC 31 2002		
REPLY:	YES	NO
INFO. COPY TO:		
DATE	INITIAL	TO
12/31/02	RS	
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER I.D.		

From: <radams@blackhillspower.com>
To: <fstreier@gp.usbr.gov>
Date: 1/2/03 1:14PM
Subject: Orman Dam

Thanks Faye

----- Forwarded by Randy M Adams/BHPL/BHC on 01/02/2003 01:12 PM -----

Randy M Adams
12/18/2002 01:08 PM

To: fstreier@gp.usbr.gov
cc: Randy M Adams/BHPL/BHC@Black Hills Corporation
Subject: Orman Dam

Hi Faye

My name is Randy Adams. I have resided in the Black Hills area all of my life, and now live in Rapid City. I am a 25 year member of the Black Hills Anglers, and would like to comment on the RMP for Orman Dam. First I would like to thank you for all of your work and research on the RMP for Orman Dam. As a member of the BH Anglers I have had an opportunity to look at the plan and it is very informative.

1 I would guess that I make 30 trips each year to fish at Orman, and I am very interested in improvements around the lake. I would really like to see the road to the boat ramp paved, or at least maintained. I do not camp there often, but I am in favor of some developed camping along with the opportunity of primitive camping.

2 I would like to encourage the adoption of alternative C rather than alternative D because alternative C would allow more access for recreation for shore fisherman, develop some of the camping areas, and allow for some primitive use.

3 I would like to say that I feel that Mr. Velder presented these plans in a very poor manner with his article in the Rapid City Journal on December 17, 2002. His headline of "Agency proposes restrictions on reservoir" does not give a good impression of the plans that you and the committee have worked on. Some restrictions to off road use are needed around Orman Dam.

Response to Randy Adams

1. The selected alternative “Alternative D, Modified” includes paving the road to the boat ramp, and a mix of developed and primitive camping.
2. Alternative D has allows shoreline access for fishing, developed camping on Rocky Point with primitive camping in other locations.
3. All alternatives include compliance with the federal regulation that restricts motorized vehicles to designated roads and requires that vehicles be legally licensed and operated by a licensed driver in accordance with State law.

From: <DrBlick@aol.com>
To: <fstreier@gp.usbr.gov>
Date: 12/29/02 8:43PM
Subject: Orman Input

Dear Ms. Streir,

Ken Edel has been getting input and informing us as a club on what happens with Orman Dam. I am excited by the proposed changes because I spend alot of time fishing and camping with my family and utilize the resevoir on a regular basis.

- 1 Studying the proposals, I really have determined that proposal #C would best suit the needs of most users. Also I would suggest that you work with the locals. You cannot determine placement of major structures by looking at the aerial veiw of the lake without knowing depth. By mid-summer users will be walking a long way to use the water.
- 2

I look forward to the positive changes that will be made.

Bill Blickensderfer E-mail dr blick@aol.com

Response to Bill Blickensderfer

1. Alternative C was not selected because of the projected difficulty in managing primitive camping at numerous dispersed locations around the reservoir. These difficulties are described in Chapter 3, Environmental Consequences, Recreation, Alternative C. Instead, Alternative D was modified to better suit the needs of the users. This was modified to include more developed campsites and a wider range of services on Rocky Point, similar to that proposed for Alternative C. Alternative D still includes primitive camping on Gaden's Point, between Rocky Point and Gaden's Point and near Golf Course Point and is similar to Alternative B. It includes shoreline access with vehicle parking and vault toilets at some of these locations. It also meets the goals described in Chapter 1 while maintaining the rural character of much of the reservoir.
2. Thank you for your suggestion on working with locals in placement of structures. We have already received valuable input from the public on roads and placement of boat ramps. We will continue to explore ways to gain public input into placement of structures. We also have detailed records for reservoir elevations and the topography of the reservoir area which will be used when locating facilities.

December 31, 2002

Faye Streier
Rapid City Field Office
515 9th Street, Room 101
Rapid City, SD 57701

OFFICIAL FILE COPY RECEIVED		
JAN 2 2003		
REPLY:	YES	NO
INFO. COPY TO:		
DATE	INITIAL	TO
1/8/03	FS	
FOURCH.D		

Dear Faye,

Thank you for sending me draft copy of the Belle Fourche Management Plan. It is apparent that a lot of work went into this plan and I hate to be critical about someone's hard work, but I hate to see this plan fail after nearly three years in the making.

1 When reviewing the plan I discovered that alternate D was the preferred alternative, I thought it must be a misprint. I don't believe anyone on the panel thought we were shooting for the improvements in alternative D. Alternative D takes more away from the public than they will receive, resulting in instant rejection by the public. I was approached by a fisherman in a local store who had just read the Rapid City Journal article that morning, and his reaction was "did you see what they want to do at Orman". If the public would review the contents of the plan presented, I believe alternative C would be a unanimous choice. [Alternative C is the only management plan that would meet the public's need for the next 10 years]

2 I believe we should only have to go through this process once. To settle for anything less than C now, would mean more reviews, delays, and expense later. We have an opportunity to develop a recreation area that would meet the users' needs now and preserve the reservoir to meet the demands of the irrigators. I could rattle on about what I think about alternative D, but [I feel D could defeat this project. Let's rethink this!]

3 I feel this plan could easily be rejected by the public. We developed a comprehensive plan but failed to convince the public that this is a good deal. As I read through the plan I noticed various remarks that made me feel like the public is going to get the shaft on this deal. [On page 27 under law enforcement we mention that areas of the reservoir may be closed if rules cannot be adopted. On page 76 under Camping and General Recreation, paragraph three, we flat out tell them that they may have to go somewhere else. It's hard to convince the public and develop their trust, that we are doing what is best for the area with those unnecessary remarks.] After the article in the Rapid City Journal, I would say we have a major hurdle to try and convince the public that this plan will benefit them. I'm sure after 3 years in the making everyone is sick of looking at this plan, but I think it could use some positive reediting.

4 [In regards to the boat ramp and the effort we made to come up with another ramp on the reservoir, I feel the site we have now is where we need to concentrate our resources. The current ramp serves the public to 33% of reservoir capacity, which puts that into the fall season after many boaters are done for the year. I believe we could modify the existing ramp to make it usable beyond 33%. I also feel we could redesign our boat docks that would provide wave protection with a mooring area. I believe we have the ability to design a dock system that would accomplish this. The proposed alternate ramp I question if it will provide sufficient depth to maintain serviceability during the draw down period. To invest in a boat ramp and parking that will not be utilized the majority of the time, would be a bad investment.]

5 [As I reviewed the map layout for the proposed areas I noticed several areas needing more work. On the map for alternative C I noticed the road system was not included as it was in alternative D. In alternative C I feel we should include areas for tent camping, playground area, showers, fish cleaning station, and a fishing pier. I can only assume that campground design is not started, but feel we should provide input to the design. The area proposed for the boat ramp parking and concessionaire leaves me concerned that input is needed. The concessionaire area should be collocated with the boat ramp along with any boat trailer parking. The showers and playground area should be in the near vicinity of the concessionaire area. The fish cleaning station needs to

include electrical power for lights and fish cleaning devices. These are all items that should be identified to inform the public of the possibilities of a well designed recreation facility. I also noticed the design was prepared and reviewed by Billings and Denver offices. I don't know if the SD Game, Fish, & Parks was included in the design or review, but it does not indicate that. If the GF&P are going to be the managing partners and operate the recreation area, then they should be involved in the design. They have proving to me that they can put together a well designed recreation area.]

- [RV use at the reservoir indicated no unlicensed vehicles or off highway vehicle use. Ice fishermen regularly use ATV for ice fishing. Does this create a problem? We also discussed the motocross area that already exists.
- 6 According to regulations indicated it appears that benefit will be lost. I see it as another area for public rejection to this plan. I cannot see the difference between what it is now and what it would be if it was designated as a area for such activities, or how the BOR is less liable now than if it was a designated area. It seems to me that having a designated area would confine the use of off road vehicles to a certain area improving public safety to the rest of the area. It would also provide law enforcement with a means of concentrating that activity to a certain area. Unless you have major plans to reclaim that area, closing it down would be another dagger in this plan. I would suggest that the area be offered to an organization that would be interested in adopting it to assist in maintaining and policing the area. If no one is interested, at least the public had a chance to preserve that benefit.]
- 7 [Inlet camping area was identified as, provided as demand indicates. Its obvious the demand is their now. The diversion canal needs lots of bank stabilization work along with designated areas that would reduce siltation and provide the user with a mud free area.]
- 8 [Grazing permits will be issued on an annual basis, down from the 5 year permit now. This seems like overkill and definitely another dagger to the plan. I don't of anyone that would be willing to invest their time or money into something that they could lose at the end of the year. I don't know if they would protect and preserve the land if the possibility existed that they could lose the lease at the end of the year. I believe we should rethink this also.]

Other than that the plan looked great. What I mentioned is really a small part of the work that went into this project. I don't mean to be critical of the plan presented, but I do care that we can implement a plan that would benefit the area for time to come. Orman Dam is 100 years old and has probably surpassed its original life expectancy. Its time to make use of this area, to provide a service to its users and preserve the longevity of the reservoir. I hope this reply is a help to the final plan and hope you consider Alternative C to meet the needs of the reservoir for the next ten years.

Good Fish'in,



Ken Edel

Response to Ken Edel

1. Please see #1 under “Response to Bill Blickensderfer.” Although Alternative C was not selected, the modifications that have been made to Alternative D provide a range of services and access similar to Alternatives B and C.
2. Alternative D has been revised to better meet the needs of the users.
3. The description of law enforcement has been revised under Alternatives B, C and D. The statement on page 27 of the draft EA was intended to inform the public of the difficulties of providing law enforcement without enforceable regulations. Similarly, the statement on page 76 was included to inform the reader that the type of recreation experience would change if less primitive camping were available.
4. At this time we are planning on concentrating our resources on the existing boat ramp at Rocky Point, as you suggest. We will also consider modifications to this boat ramp that provide wave protection. A boat ramp will also be considered on the east side of the reservoir.
5. Alternative D, Modified, now includes the road system. It also includes a fish cleaning station, electricity, water, playground, and a comfort station. We will include your suggestions for tent camping, a fishing pier and location of facilities in the designs for Rocky Point. As our managing partner for Rocky Point, South Dakota Department of Game, Fish and Parks will be providing the primary design for facilities. A concession area on Rocky Point is not being considered at this time, but may be considered in the future depending on visitor use.
6. Shoreline access points have been provided a key fishing locations around the reservoir. Campers or fisherman will be able to access the shoreline at these locations. The existing motocross area has never been designated as such. Establishment of a motocross area was considered, and is described on page 36 in the final EA/RMP.
7. Parking and fishing access is being provided at the Inlet Canal.
8. The grazing leases which expired in December 2002 were one year permits, renewable up to four times. New leases which are also one year permits were issued through a competitive bid process in January 2003. Prior to the bidding process, interested people were informed that the leases may not be renewed, depending on the management selected for the grasslands. All lands which were advertised were leased to responsible individuals. If the decision is made to refrain from grazing lands in the future, leaseholders will be given adequate notice of the change.

Thad Fitch

17 December 2002

Faye (BOR)

Thad Fitch
209 Windslow Dr.
Rapid City, SD 57701
716-1490

OFFICIAL FILE COPY
RECEIVED

DEC 17 2002

DATE	INITIAL	TO
12/17/02	TS	

CLASSIFICATION
PROJECT
CONTROL NO.
FOLDER I.D.

Dear Faye,

This will serve as a written document of what we talked about this morning. I am very concerned and interested in the state of Orman dam. I am aware that input is needed for the future direction of the dam.

- 1 [I feel strongly that some one needs to step in and make Orman a safe fun place for a family to go fishing and camping.] I know there have been numerous assaults. As well as assaults on Police Officers at Orman. I would not ever endanger my family to such a place just to try to enjoy the camping and fishing. Alcohol use/abuse has been widely accepted at Orman by the "local"
- 2 element. [The dirt biking and fourwheeling is also a problem that must be addressed.]

I am a concerned sportsman and if you check the records it is the SPORTSMEN who drive this state. The #1 revenue source for SD is the sportsman's dollar. It is not the beer swilling partiers that provide funding for a vast majority of all projects in the state.

If Orman were made safe and more family oriented the families would come to spend their money and vacations in Belle Forche not Pierre.

Lake Maconahey in Nebraska faced these same issues in the late 80's early 90's. The state of Nebraska chose to force it's patrons to be law abiding and more user friendly. It is now a fine place to go fishing and camping. It in turn draws a much better crowd.

- 3 [I feel that changes must be made to benefit the sportsman who spends the dollar to support this rural community.]

Thank you for your time


Thad Fitch

Response to Thad Fitch

1. Through the adoption of Alternative D, Modified, we intend to develop a set of rules and regulations that are specific to the reservoir, and continue to provide law enforcement to enforce them.
2. We intend to enforce federal regulations regarding off-road vehicle use, and restrict off-road vehicle use to established roads and access areas.

75 12/30/02

Dec 24 2002

Dear Faye.

We are Regular users of the Orman Dam Area. We have a motor-home and a Boat.

1 [In the last 18 years that we've been going to Orman, we've seen the increased useage.

With this increase, the problems increase also -etc. GARBAGE - Sewage etc

The Biggest problems I've seen are #1 - People Dumping their holding tanks on the spot that they were camping before leaving

#2 - Fights at Boat Dock During heavy use times

#3 - GARBAGE left every where

#4 - Young people All nite BEER Parties

#5 - Young people on Jet Skies

#6 - ROAD Systems that Beat people's cars - Boats - Motorhomes etc to Death]

2 [I like Alternative 'C' the Best. But could live with Alternative 'D']

3 [Something has to Be Done Now! Things are already out of hand, But it can & will get worse].

Thank-you for All your work & efforts on this issue -

Sincerely yours
Mike Klamm

Response to Mike Klamm

1. Through traffic counts we have recorded increasing visitor use at the reservoir. Alternative D, Modified is designed to address the issues you raise in your letter.
2. Alternative D has been modified, and aspects of Alternative C have been blended into the modification.
3. We intend to begin implementation of the selected alternative as soon as possible.

Faye Streier

Hi. I'm Kenny Merrell. I talked the phone with you.

1 [I have put a map with some fishing road's on it. there are a lot of older people that use the lake for fishing only, they can not walk from parking lot or up and down hill's. I think we could get rid of 60% of the trail's & road's out there and still get alot of people to the shore! But we can not forget the shore fisherman! we talked of you coming down this Spring and going over that, I can get a group of shore fisherman together if you would.]

2 [For emergency and to take the presure off the one boat ramp and the west side of Rocky pt. there's two place's that you can load and unload all sizes of boats & Jet SK's that would work great! the Sandbar at the south end of the dam's work's good for low water.]

3 [I think you need more day use place's! maybe one on Rocky pt.]

4 [Over all it's a good plan but due to low water you have to have a low water road plan. And Fruitdale point is the most shore fished pt out there in the Spring and early Summer I would like to see at least a road in there.] We can't forget the Shore fisherman.

over.

OFFICIAL FILE COPY RECEIVED		
JAN 16 2003		
REPLY:	YES	NO
INFO COPY TO:		
DATE	INITIAL	TO
1/16/03	KS	
Shore		
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER I.D.		

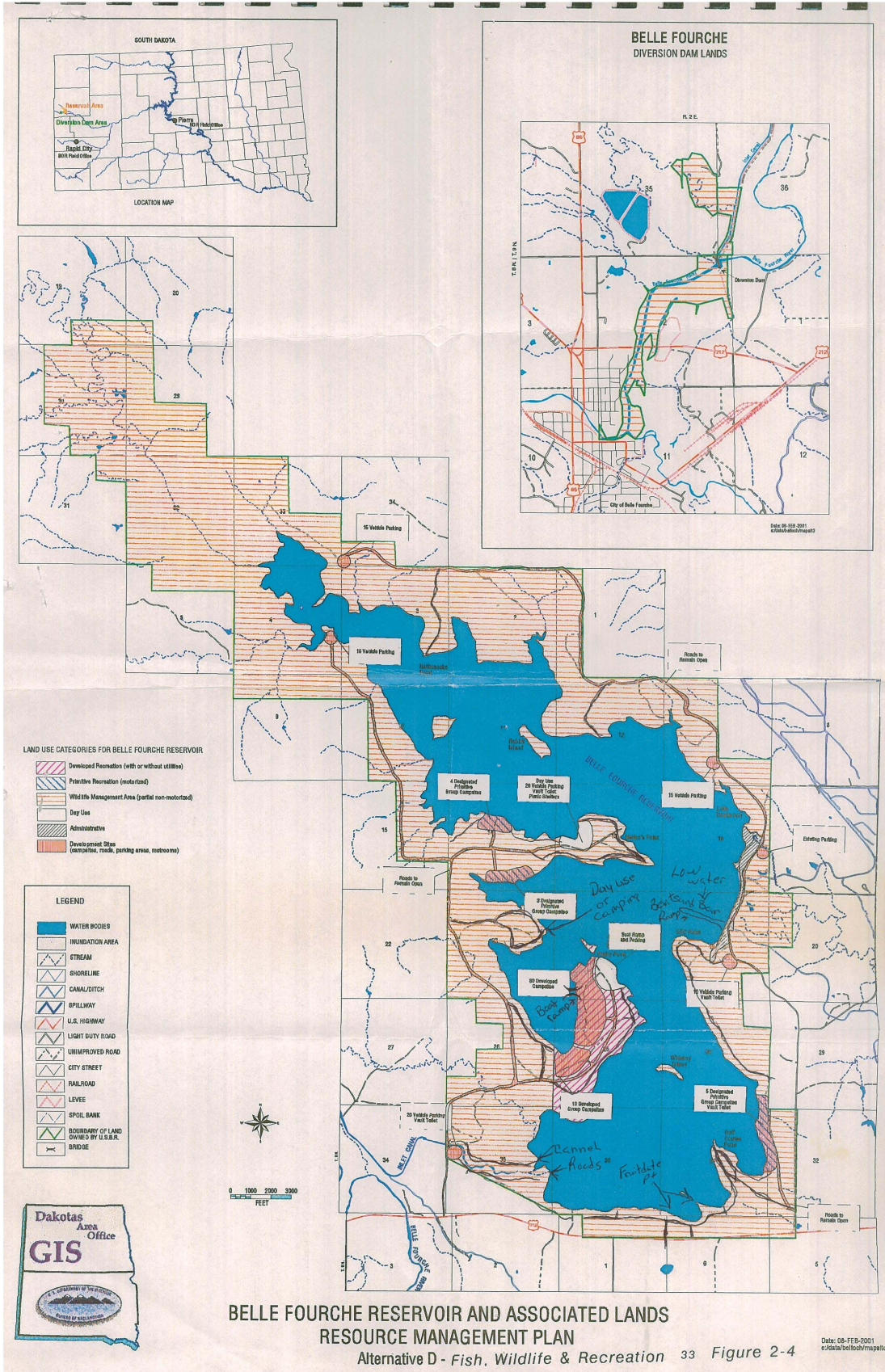
Kenny Merrell

RECEIVED		OFFICIAL FINE COPY	
REPLY		NEED COPY TO	
YES	NO	TO	INITIAL
ASSOCIATION		CITY	
2058		WAVE	
Belle Fourche		SD	
57717			

Thank you.

Kenny Merrell
president of the
High Plains Angler's
75 members.

2058 WAVE
Belle Fourche
SD. 57717



Response to Kenny Merrell

1. Thank you for your map and suggestions. We have incorporated many of these into our road plan for Alternative D, Modified.
2. We have included a boat ramp site at another suitable location on the reservoir in Alternative D, Modified. On Rocky Point, for the present we have decided to focus resources on the existing boat ramp, but may consider a ramp at the location you indicate in the future.
3. Alternative D, Modified includes picnic sites on Rocky Point, along with a day use area on Gaden's Point and on the south end of Belle Fourche Dam.
4. The road plan for Alternative D, Modified includes road access to Fruitdale Point and designated low water trails.

OFFICIAL FILE COPY RECEIVED	
8007 0-1 NVP	
REPLY:	YES NO
INFO. COPY TO:	
DATE	INITIALS TO
CLASSIFICATION	
PROJECT	
CONTROL NO.	
FILE NO.	

Ms. Streier

This letter is pertaining to the Resource Management Plan dealing with the Belle Fourche Reservoir. As adjacent landowner and irrigators of the Project for the past forty five years, we believe we have something to be said before the Bureau of Reclamation makes its final decision.

1 [The original purpose of the Belle Fourche Reservoir was for irrigation water storage for the Belle Fourche Irrigation Project and not necessarily for the recreation of the general public. The irrigators have been making the payments of the operation and maintenance. All alternatives except for alternative A deal involve the South Dakota Game, Fish and Parks with the management of the land surrounding the Reservoir. This would be a mistake on the Bureau's part because that would start a precedent. It would be turning control of the Reservoir land and it's future over to someone with no responsibility or stake in the Belle Fourche Irrigation Project.] Game, Fish and Parks has no business in managing the Bureau's land. If the Bureau of Reclamation has shortages of staff and resources, considering aligning with the Bureau of Land Management. They are experienced, have staff involved in recreation, have an office in Belle Fourche and a U. S. Marshall is stationed there.

2 [The law enforcement that the Bureau pays Butte County for patrolling the Reservoir is substandard except during holidays and high school graduation parties. When the few times that Reservoir land were closed to motorized land vehicles because of fire danger, Butte County refused to investigate and prosecute the illegal traffic on the Reservoir.] We have seen this for fact while riding horseback on our own property and looked down onto the Reservoir. We have turned in information to the Sherriff's office and they said they couldn't enter because of the fire danger.

3 There is part in your Assesment and Management Plan booklet that deals with changing the perimenter fences as to allow the wild game to more freely migrate in and out of the Reservoir lands. [There is no problem with the existing fences as the large game (deer and antelope) have little if any problem with the crossing of existing fences. If there is a shortage of large game to hunt on the Reservoir lands, it probably has something to do with the long slender shape of the land, boat motor noise and people target practicing with firearms. This has much bearing in whether large game would prefer to there or not.] As long time neighbors to the Reservoir, we have seen large game in numbers when ever the traffic and visitation to the Reservoir is down. Whenever there is any pressure onto the wildlife, they have a tendency

to escape to larger, more remote and inaccessible tracts of land
4 [Plans B, C and D deal with the increase of people visiting the Reservoir
land. This would not help with hopes to increase the large game numbers and
the local law enforcement is not capable of effectively patrolling the
Reservoir. The off-road traffic would increase, the fire danger would increase
and our own personal safety would decrease.]

Capp Ranch
Earl Capp & Sons

Response to Earl Capp and Sons

1. The South Dakota Department of Game, Fish and Parks has been a managing partner at the reservoir since 1969. They also manage Reclamation lands at Angostura and Shadehill Reservoirs and lands associated with the Oahe Project. Currently, they manage Rocky Point and the wildlife area below Belle Fourche Dam through agreements with Reclamation. These agreements specify that Reclamation take an active role in reviewing and approving actions proposed by SDGF&P at the reservoir. SDGF&P assumed management responsibilities at the reservoir with the full understanding that the reservoir was built for irrigation purposes and any recreation developments have to be designed with that in mind.
2. We appreciate your concern regarding law enforcement at the reservoir. We intend to adopt regulations for the reservoir that make it easier for law enforcement officials to enforce and prosecute offenses.
3. We agree that recreation uses can conflict with wildlife habitat. Alternative D, Modified was designed to allow visitor access while reducing the pressure on wildlife on a large portion of the reservoir. Changes to fencing are proposed to allow for easier passage of wildlife from private to reservoir lands, possibly reducing some of the pressure on private lands.
4. We understand your concern about increasing visitors to the reservoir. Alternative A describes the current situation at the reservoir. Visitor use is currently increasing, with little or no facilities to deal with this use. Alternatives B, C and D all propose actions to manage this visitor use. Alternative D, Modified, was selected because it manages off road use, and provides for improved wildlife habitat while still allowing for visitor use. We also predict that the designated roads and campsites proposed under this alternative will reduce the risk of wildfire.

Sherida Riborday

January 13, 2003

Bureau of Reclamation
Resource Management
515 9th Street RM 101
Rapid City, SD 57701

Dear Ms Streier,

I am writing to you to voice my opinion of the bureau's plans to restrict usage of the Belle Fouche Reservoir. I have also contacted Sen. Tom Daschle's office and requested the same.

1 [It is one of the very few places left for shoreline fishing for the average family who can't afford a boat or a vacation to such places as Yellow Stone National Park and ect. In the nearly 30 years that our family has enjoyed the lake, we have seen people sleeping in back seats of cars, on the ground and in make shift tents, just to have some time away from the hectic life they live during the week. Please don't take that away from them!]

2 [Families have supported this lake over the years with the purchase of fishing licenses, and even that has reached a hefty price. And I am sure that the next step will be to have an entrance charge. That will also eliminate many families.]

The word is to keep families together, and what better way to do it than a picnic and campout along the shoreline of the Belle Fouche Lake watching the many wild life that already make their homes there.

3 [In closing, I am asking you to please reconsider your plans to turn the majority of the reservoir into a wild life management area.] Thank you for your time and efforts.

Sincerely,

Sherida Riborday

Sherida Riborday

Mrs. Sherida Riborday
1806 Rushmore St
Rapid City, SD 57702

OFFICIAL FILE COPY RECEIVED		
JAN 15 2003		
REPLY:	YES	NO
INFO. COPY TO:		
DATE	INITIAL	TO
1/16/03	RS	
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER I.D.		

Response to Sherida Riborday

1. Shoreline fishing will be encouraged and available under Alternative D, Modified.
2. As described in Chapter 1, “Background of the Planning Area”, the reservoir was constructed by Reclamation as an irrigation reservoir. Under its current authorization, irrigation remains the primary benefit of the reservoir, with fish, wildlife, and recreation as additional benefits. The Belle Fourche Irrigation District is responsible for payments to offset the costs of construction and operations and maintenance of the reservoir. The fishery in the reservoir is managed by the State of South Dakota, who stocks the reservoir. While fishing license fees contribute towards maintaining the fishery, they do not contribute to management of the lands surrounding the reservoir or operating and maintaining the dam or reservoir itself.

An entrance change is proposed for Rocky Point, which will offset some of the costs of maintaining facilities there. Camping fees are also proposed. However, an entrance fee for the majority of the reservoir is not proposed. Any fees will be consistent with other state or federal fees being charged in the area, and will be proportionate with the services provided.

3. The portion of the reservoir that is designated as Wildlife Management Area under Alternative D, Modified allows for fishing, hunting, boating, and day use access.

January 2003

The following sportsmen from the Northern Black Hills area support Alternative A (no action) in the draft environmental assessment of a proposed Resource Management Plan for Belle Fourche Reservoir.

Name

Address

Donnie M. Luschmidt	21850 CUSTER PEAK RD DEADWOOD SD 57732
Lynnie Stummel	2022-11th Belle Fourche S.D.
Kathleen Ogden	1321 Edkorn Belle Fourche S.D.
Frank Dreyer	7 Swan Ln. Spearfish S.D.
Robert P. Schneider	1649 N. 3rd St., Spearfish, S.D.
Joseph A. Brorak	1040 10th St. Spearfish, S.D.
Cecil Whitlock	354 Evans Ln. Spearfish S.D.
Luke Edwards	704 8th St. Apt Spearfish, SD
Floyd C. Summers	216 Upper Valley Spearfish SD
Robert Bufort	10426 W. Highway 14 Spearfish, S.D.
William C. Bonanza	340 Hillview Spearfish S.D.
James A. Reed	402 7th St. Spearfish SD
Dianna A. Kernan	Box 191 S.A. Dingle
Robert L. Carl	346 W. Hudson Spearfish S.D.
Walter C. Buehler	950 McQuigan Rd Spearfish SD.
Shirley H. Peterson	1220 CEDAR #203, STURGIS, SD.
Robert M. Laughlin	2910 HILLSVIEW RD SPEARFISH S.D.
Tom Swann	2301 W RAINBOW ROAD SP SD.
Carla Bertalot	1215 700thills dr Spearfish sd 57783
Ron Carcamora	100 DUBOIS LN, SPEARFISH SD.
Mary R. Worman	931 W. Jackson #21 Spearfish SD
Jim A. Jued	824 E Grant, Sp. SD

Cecil Whitlock
 354 Evans Ln
 Spearfish, SD 57783

From: "Renel Hall-Beck" <bffd2@dtgnet.com>
To: <fstreier@gp.usbr.gov>
Date: 1/9/03 1:24PM
Subject: BF RMP

The Belle Fourche Irrigation District Directors voted to support Alternative A.

Renel A. Hall-Beck
Belle Fourche Irrigation District

**BELLE FOURCHE IRRIGATION DISTRICT
209 DARTMOUTH
P.O. BOX 225
NEWELL, SD 57760
(605) 456-2541**

January 21, 2003

Bureau of Reclamation
Rapid City Field Office
Attn: Mr. Jeff Nettleton
515 9th St. Room 101
Rapid City, SD 57701


OFFICIAL FILE		RECEIVED	
JAN 21 2003			
REPLY:	YES	NO	
INFO. COPY TO:			
DATE	INITIAL	TO	
1/21	AW	Faye * Actio	
1/21	ADA	Curt	
1/22	BRD	Gary	
CLASSIFICATION			
PROJECT			
CONTROL NO.			
FOLDER ID:			

Subject: Draft EA/RMP Belle Fourche Reservoir Comments

Dear Mr. Nettleton:

- After reviewing the draft EA/RMP I would like to offer comments. Pursuant to the National Environmental Policy Act (43 CFR 1601.0-8), it states in part that economic analysis has to be done. [Fees are being considered and current
- 1 grazing leases may be removed or altered which directly affect individual's income. Therefore, it's imperative that the economic impact be evaluated. This document does not address the economic area. Because there is a value to the recreational fees, consideration should be given that said fees could be used to offset irrigation costs.]
 - 2 [A managing partner is desired by the USBR, however, the only option for a managing partner stated in the document is SDGF&P. This is very limiting and blocks other options.]
 - 3 [Lastly, this management plan has become controversial and an environmental impact statement may be needed to address the issues fuller.]

Sincerely,



Renel A. Hall-Beck
Project Manager

Cc: Marty Jackley

Response to Renel Hall-Beck - Belle Fourche Irrigation District

1. There are currently 7 grazing leases in effect for Belle Fourche Reservoir. These are one year leases, renewable up to four times. They are issued through a competitive bidding process; therefore there is no assurance that any specific individuals will obtain a lease. When these leases were issued in 2002, prospective bidders were informed of the potential for changes in grazing practices. If changes are made to grazing practices, leaseholders will be given adequate notice of changes.

Fees collected by South Dakota Game, Fish and Parks are used for the management and operation of recreation facilities. The recognized benefit of Belle Fourche Reservoir for irrigation is 100 percent. Therefore, reimbursable operation and maintenance costs are the responsibility of the irrigation district. As stated on page 1 of the EA/RMP, changes to water operations are outside of the scope of the document.

2. South Dakota Game Fish and Parks is referred to as managing partner in reference to Rocky Point and the Wildlife Area below the Belle Fourche Dam, as they currently manage these areas.

3. We have determined that an environmental impact statement is not needed for the RMP. Please see the Finding of No Significant Impact for the reasons for this determination.

Response to Renel Hall-Beck - Belle Fourche Irrigation District

1.
 - a. The figure, “Belle Fourche Storage Allocations” has been added to Chapter 3. The amount of water that is allocated to irrigation is defined in Chapter 2, “Contract with the Belle Fourche Irrigation District”, and Chapter 3, “Water Quantity”. The Reservoir Allocation section in this chapter explains that the active conservation in the reservoir is allocated to irrigation, with additional benefits to wildlife, recreation, and fisheries.
 - b. The term, “operational problems”, refers to the daily land and recreation management activities. For example an RMP may contain information on how permits for special uses would be issued; this information could then be consulted when managers receive requests. It does not refer to water operations.
2. Please see Chapter 1, Reclamation and Managing Partners, for a definition of “minimum” as it is used in describing Alternative B.
3. The table, now located on page 42, shows that there has been improvement in grassland condition since leases were revised in 1997. Greater improvement is expected under the changes in grazing practices outlined in Alternatives B, C, and D. The grazing plan discussed on page 85 of the draft EA/RMP refers to the changes that were made to the leases in 1997. This has been clarified in the document. These changes and any new recommendations from future inventories will be incorporated into the management of the lands.
4.
 - a. We do not intend to renew the permit which allowed fireworks at the reservoir on the 3rd of July for health and safety reasons.
 - b. Boating is addressed in Chapter 3, “Recreational Activities at Belle Fourche Reservoir”, “Recreational Activities at Belle Fourche Reservoir” and through discussions of boat ramps and parking. Ice fishing is a popular activity at the reservoir. It has been added to the table “Recreational Activities at Belle Fourche Reservoir” in Chapter 3, Visual and Recreation Resources, Affected Environment. We do not have information on the importance of skiing as a winter activity at the reservoir, so did not include that in the discussion.
 - c. Chapter 3, “Water Quantity”, gives detailed information on reservoir elevations. This information can be used in planning any recreation developments such as boat ramps or campsites. This section also points out the importance of planning recreation developments with water level fluctuations in mind. Water operations are outside of the scope of the EA/RMP, therefore the quantity of water needed to meet the demand of recreation was not evaluated.

1-15-03

75 1/17/03

To Whom it may concern:

1 [I am writing this letter to request that you leave the Belle Fourche Reservoir/Osman Dam as it is. I feel it is important to leave this area as accessible as possible for people. There is so much development at almost all of the other public lakes that there isn't anywhere for people to "just go fishing". There are a lot of locations for people to go if they want amenities and I feel it's time to stop all of the improvements. [I don't own a boat and it's nice to be able to pull up to the shoreline and cast out a rod. I also feel it's important to have a lot of shore available so people have room to spread out. I know a lot of people who use that dam who would have difficulty parking and then having to walk with their equipment to fish.]

Thank You for your time;

Mel Weyer
2414 Minnewasta Crt
Rapid City SD 57702

Response to Mel Weyer

1. We did not select the Alternative A - No Action because of the increasing visitor use and the problems associated with not managing that use. We have modified Alternative D to allow for ample shoreline fishing access. The majority of improvements have been confined to the Rocky Point area, with much of the reservoir retaining a primitive character.
2. We intend to provide fishing access which is available to all. Fishing access roads will end in small parking lots that are located close to the shoreline.

They are writing regarding the proposed development of Belle Fourche Res.

We have attended most of the informational meetings.

1. The majority of the people we spoke with at the meeting as well as elsewhere are in favor of Alternative A. As I wrote in one of the letters we sent, most of the Dam users would not object to paying a fee to cover garbage receptacle, toilets, etc. We have used the lake for 50 yr or so - not because it is free but because we have some freedom to camp with friends & family.

2. One question no one seems able to answer - what happens when the dam goes down & the proposed sites are 2-3 blocks from the water?

Government is good at spending (wasting) tax payers money & we hope this project won't be one of them.

Conley, Marilyn Torgrade
1806 9th Ave
Belle Fourche S.D. 57717

OFF
JAN 21 2003
28 4/20/03
most
meetings
CLASSIFICATION
PROJECT
CONTROL NO.
FOLDER I.D.

Response to Conley and Marilyn Torgrade

1. Thank your for attending the information meetings held during preparation of the RMP. We received a wide range of comments during the scoping period for the RMP. Alternative D, Modified was designed to provide a combination of services, including many group campsites to accommodate family groups.
2. Any recreation developments at the reservoir will be designed with the knowledge that the water level fluctuates with irrigation use.

John and Darleen Thacker
P O Box 222
St Onge, S . D 57779
Att:
Faye Streier
Rapid City Field Office
515 9th Street. Room 101
Rapid City, S D 57701

OFFICE		
JAN 21 2003		
FILE	INITIAL	TO
4/20/03	FS	
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER I.D.		

Dear Faye

Thank you for sending us the Belle Fourche Reservoir Resource Management Plan. You are to be congratulated on this comprehensive study. We realize the time and effort put in by you and your personnel on this project will help all of us arrive at a management plan. However, regardless of which plan is selected, you can't please everyone.

- 1 [During the time when you were having public forums to obtain input from those that use Belle Force Reservoir, clearly the majority of those in attendance, plus numerous others that we had the opportunity to contact and visit with, stated that they prefer that no changes be made at this time.]
- 2 [During these tight economic conditions, both governmental and personal, we feel that Alternative A, No Action is the best course of action to benefit the majority of the people. An addendum to Alternative A might be a small use fee as most of the people we talked to would grudgingly pay a small fee.]
- 3 [We realize litter is a problem, however S D highways always look nice as community groups are willing to do their civic duty. We believe that civic groups and even high school groups, since they do a lot of the damage, would take care of the problem.] During these times of drought, as we all know, a development of any kind would be of little use to the public and the astronomical cost could not be justified.

Sincerely,
John and Darleen Thacker

Response to John and Darlene Thacker

1. We received a wide range of comments during the public scoping for the RMP. These issues and concerns are summarized in Appendix A.
2. We did not select the Alternative A - No Action because of the increasing visitor use and the problems associated with not managing that use. The RMP outlines some of the sanitation and law enforcement problems at the reservoir. Alternative D, Modified was designed to address these problems while keeping the financial investment minimized. Developed facilities will be concentrated on Rocky Point unless demand for services increases. The designated primitive campsites, access roads, vault toilets, and parking areas around the reservoir will not require a great financial investment.
3. Thank you for this suggestion. We will explore opportunities to use these types of groups for volunteer activities at the reservoir.

OFFICIAL FILE COPY RECEIVED

JAN 21 2003

REC'D: [initials]

INFO. COPY TO:

DATE	INITIAL	TO

PROJECT CONTROL NO. [initials]

FILED BY [initials]

To whom it may concern
 The rumors of concern
 Fauche, Reservoir's
 From what I hear they are going
 to fence off Fruitdale Point, Half Point
 and the last shore, if it happens there
 will be a lot of people that are going to
 be unhappy, not be able to fish at Camp.

1

The older people that will have to
 walk in to these areas that will not be
 able to fish at Camp.
 If the inlet canal is forced off there
 a lot of people that won't be able to
 go fishing at Camp.

2

Now I can see where there is a lot
 of roads that be shut off + should be shut
 off, For the reasons of the people that
 want to go out + tear up the land, make
 big ruts, mud holes to prove that their
 H X 4 can go here or there.

3

There should be fences put up to keep people
 on the lake shores, They don't need to make
 more roads or trails than we already have.
 The main road to the boat dock + that
 area needs some improvement to it. It don't
 really need to be paved.

4

as far as what is done to improve the
 lake north of the ridge that run southeast of
 the Y to the boat + Gavis point, you can do
 anything you want to do there
 The permit that could be charged
 for should let you go to any lake, in SD?
 if it cost \$20-25 a year would be in reason

5

OFFICIAL FILE COPY
RECEIVED
6 2006 1 9
CM
OT
MONTAGNER
REC'D
FEBRUARY

If you spend a lot of money on this project, you should look to the future of how you are going to get it back if you spend millions on this you never will get it back from Camping & Fishing Permits.

What the Department wants to remember this Project was built for, was to improve the Crops & land on about millions of acres of land that was grass lands & grass ranches to the east & south of the reservoir.

The reason for improvements is a bunch of people want to have places to go with their Campers that has the same things that they have at home, they can bring their boat, their cell phone & it is free!

8 I'd say you do some improving on the reservoir, but do it with thoughts of everybody, not just a few of the people that say all the hog or nothing.

My thoughts
Garland Foster

Response to Garland Foster

1. There are no plans to fence these areas. Road access will be provided to these locations. Fencing may be one of the methods used to close roads, but it would be localized, and would not restrict walk-in access or travel on designated roads.
2. There are no plans to fence the Inlet Canal. Road access will be provided for fishing access.
3. We intend to close some roads for the reasons you describe, but maintain enough roads to allow access to fishing locations.
4. Under Alternative D, Modified, the road to the boat ramp on Rocky Point will be paved.
5. Fees on Rocky Point would be consistent with the State entrance system. Please see Alternative D, Modified for a description of the fees.
6. Entrance and camping fees will be applied towards operation and maintenance of recreation facilities. We intend to keep the financial investment to the minimum required to provide improved roads and services, but realize that not all of this investment will be directly recouped. However, this investment will improve health and safety and provide benefits to users of the reservoir and the local community.
7. Irrigation is the primary authorized purpose of the reservoir, and it will continue to be managed according to this use.
8. The selected alternative was designed to provide a variety of recreation opportunities.

OFFICIAL FILE COPY RECEIVED		
JAN 21 2003		
REPLY:	YES	NO
INFO. COPY TO:		
DATE	INITIAL	TO
PROJECT		
HOLDER I.D.		

Jan. 17, 2003
Lead, S.D.

Dear Faye -

The following ~~are~~ ^{are over} comments on the Belle Fourch Reservoir and associated lands.

- 1 [We support alternative A; being no action needed. All that is necessary is road maintenance, adequate toilets and garbage pickup containers]
- 2 Most campers outfits are self-contained - [Grazing rights should continue; why waste the grass when there is such a shortage of grass/hay right now?]

S. D. Game, Fish and Parks and the Bureau of Reclamation should save this time and money! We have plenty of developed state and private campgrounds and this one should be left as it is!

I am familiar with Ormon Dam for the past 65 years; born in Belle Fourche; lived on an irrigated farm west of Newell for many years; west of Lead the past 40 years. We and our 4 grown children and families go to Ormon Dam fishing, boating and camping several times each year. [We enjoy and want the free public access to continue whether it is for one day or several. Grazing fees and perhaps a boat dock charge should pay the \$60,000. maintenance costs.] "If it isn't broke - don't fix it." Save your money - We do not need any more Government Control!

Sincerely, Betty and Wayne Ryan, Sr.
11286 Nevada Gulch Road
Lead, S.D. 57754

605-584-1169

Response to Betty & Wayne Ryan, Sr.

1. Please see response number 2 to John and Darlene Thacker for reasons why the no-action alternative was not selected.

2. We would like to clarify that livestock grazing at the reservoir is not a right. Grazing permits are issued through a competitive bidding process. When it is determined that permits will be issued for a specific area, it is advertised in local newspapers and the bidding takes place at a public meeting. Any interested individuals may bid, and the highest bidder receives the permit. They receive a one year permit, renewable up to 4 times. When this permit expires, there is no guarantee that they will receive a permit in the new cycle, as another individual may bid higher than them. Currently, permits are in place for much of the land at the reservoir.

3. Under Alternative D, Modified, an entrance fee is proposed for the Rocky Point area only. This fee will be consistent with other State entrance fees. Camping fees would be charged also. These would be consistent with other State and Federal fees being charged in the area, and will be proportionate to the amount of facilities provided.

The fees which are received from grazing permits can not be used for recreation maintenance. These fees must be returned to Reclamation's general fund. Entrance fees on Rocky Point will help to fund maintenance costs.

OFFICIAL FILE COPY RECEIVED	
JAN 17 2003	
REPLY:	YES NO
INFO COPY TO:	
DATE:	INITIAL:
CLASSIFICATION	
PROJECT	
CONTROL NO.	
FOLDER NO.	

To whom it Concerns:

17-03

1

In my opinion proposal to turn Orman Reservoir into a wildlife management Area.

In the past two years, I have been going to the reservoir to fish, walk and just be out of the house. Wildlife, you got to be kidding. My two and 1/2 years going out there has been, let's see two deer, one antelope, a few birds, one badger, three dead rabbits and a lot of bugs.

It's a shame to change what people here enjoy doing, just to please a few. Having the road to the boat dock (only one) would increase speed. Primitive Camping, hey that is what people go out there for, to get away from the everyday grind, enjoy the outdoors, relax, have fun whether it's fishing, riding ATV's, dirt bikes, whatever. Where else can we go to do this without paying a fee.

In my opinion whoever brought this up, doesn't go out there, doesn't intend to, just see dollars make. My vote no,

Tim & Pat Boren
PO Box 142
Belle Fourche SD 57717

Tim Boren
Belle Fourche

Response to Tim Boren

1. Please see the final EA/RMP, Chapter 3, Wildlife, for a summary of some of the wildlife species documented at the reservoir. The land use category, Wildlife Management Area, allows a variety of uses including hunting, boating, fishing access, hiking, horseback riding, mountain biking, and vehicle travel on designated roads.
2. Paving the road to the boat dock will reduce dust, erosion, and damage to vehicles. We intend to post speed limit signs and provide regulations and law enforcement at the reservoir which will help to control speeding.

1-18-83

Faye Streier;

I've lived on a irrigated farm in the Redland-Vale for most of my life. [the dam was built for irrigation and I would be most disappointed if the primary use would be for recreation] I'm for "no change" we need it to remain "as is."

Helen Erk

Newell SD 57760



Helen Erk
 Hc 66 Box 63
 Newell, SD 57760

OFFICIAL FILE COPY RECEIVED		JAN 21 2009	
REPLY:	YES	NO	
INFO COPY ID:			
DATE:	INITIAL	TO	
CLASSIFICATION			
SUBJECT			

Response to Helen Erk

1. Please see the discussion on irrigation use and water levels in Chapter 3, Water Quantity. As stated in the RMP, the primary authorized use of the reservoir is for irrigation. A contract for irrigation water is currently in place with the Belle Fourche Irrigation District. This use or contract will not change with implementation of the RMP.

Robert E. Hastings

Robert E. Hastings
4141 Penrose Place
Rapid City, SD 57702

Jan. 16, 2003

OFFICIAL FILE COPY RECEIVED		
JAN 21 2003		
REPLY:	YES	NO
INFO. COPY TO:		
DATE	INITIAL	TO
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER ID.		

Bureau of Reclamation
Attn: Faye Streier
Rapid City Field Office
515 9th Street, Room 101
Rapid City, SD 57701

Dear Faye Streier:

I appreciate the efforts of you and the staff of the Bureau of Reclamation that went into the preparation of the draft EA/RMP on the Belle Fourche Reservoir. It reflects a very thorough consideration of the alternatives and I commend the Bureau for the hard work that went into it.

As a land owner at the Belle Fourche Reservoir, and a recreational user, I am very interested in what takes place at the Reservoir. After reviewing the EA/RMP draft, I would support Alternative D, the Fish, Wildlife, and Recreation - Preferred Alternative. One important benefit of this alternative is that it would greatly reduce damage by off-road vehicle use, particularly down by the lake. It would also reduce dust, noise, pollution and vandalism, yet would still provide roads to get close to the lake shore all around the perimeter. A person wouldn't have far to walk to get to the lake.

I also feel that Alternative D would have the best impact on wildlife and visitor use. Having designated developed and semi-primitive campsites would enhance the area, making it more attractive and convenient to the users. A paved road from Highway 212 to Rocky Point would also be a significant improvement.

2 [There are a couple of additional improvements which I would recommend be added to Alternative D. It would be beneficial if more dumpsters were placed around the lake, particularly at the designated parking areas. It also appears that more locations should be targeted for bank erosion control, and perhaps more trees could be planted as near as possible to the shore line.]

Thank you for inviting my comments. If you would like to discuss with me further, I can be reached at 605-388-0892.

Sincerely,


Robert E. Hastings

Response to Robert E. Hastings

1. Alternative D, Modified, was developed to address the issues you bring up in your letter.
2. Thank you for you suggestions. We intend to provide trash containers at some of the designated parking areas. We also intend to plant trees to help prevent bank erosion.

January 20, 2003

U.S. Bureau of Reclamation
Rapid City Field Office
515 9th Street, Room 101
Rapid City, SD 57701

Gentlemen:

I appreciate the opportunity to review and comment on your draft environmental assessment for the Resource Management Plan proposed at Belle Fourche Reservoir. My earliest childhood fishing memories are catching walleye at Fruitdale Point in the 1940's with my Dad and brother. Since my resignation and move back to this area, I still enjoy the many recreation opportunities available at Belle Fourche Reservoir.

OFFICIAL FILE COPY RECEIVED	
JAN 21 2003	
REPLY:	YES NO
INFO. COPY TO:	
DATE:	TO
CONTROL NO.	
FOLDER I.D.	

1 [It is disturbing to learn the preferred alternative for future management at Belle Fourche Reservoir will eliminate most of the shore fishing and the primitive camping experience the public has enjoyed since the dam was constructed.

2 [In reviewing your environmental assessment I fail to find sufficient justification for changing the current primitive recreation (motorized) status to a wildlife management area. In your Purpose and Need statement you indicate one management objective is to meet the "needs of the public". In your public scoping effort, you identified the following public issues which appear in Appendix A of the environmental assessment: 1) maintain the primitive character of the reservoir with limited development, 2) restrict any new improvements at the reservoir, 3) is it worthwhile to invest a large amount of money in recreation improvements knowing that reservoir levels will fluctuate? 4) allow primitive camping to remain, 5) some people feel that the road system is adequate or road improvements will lead to increased use or possible problems, 6) some felt that additional regulations are not needed, 7) the shoreline and reservoir should remain open to public use, 8) make shoreline and facilities accessible to elderly and disabled, and 9) Increased developments will increase pressure on the fishery. These nine issues seem to suggest a public preference for the "no action" alternative. There were two wildlife issues identified by the public as follows: 1) wildlife habitat should be improved and 2) establishing a walk-in wildlife area. Since wildlife habitat improvement projects have been completed in the past and can continue under the current management system, there is really only one public issue that would indicate a preference for establishment of a wildlife management area, your preferred alternative.

3 [Your environmental assessment uses the terms "resource damage", "unnecessary trails", "unauthorized tracks and trails", "resource damage caused by off-road vehicle use" etc. many times throughout the document. In the interest of understanding the

term "resource damage" I met with a Bureau of Reclamation staff person and was told resource damage refers primarily to "vegetation lost or damaged by motor vehicles and primitive camp sites" on the public lands around Belle Fourche Reservoir. If this type of "resource damage" is truly an issue, in my opinion the 357 acres scheduled for development in the preferred alternative will result in far more acres of vegetation loss and soil disturbance than has ever occurred at Belle Fourche Reservoir by some 80 years of past public use.]

4 [In my opinion, the Bureau has attempted to sway public opinion by publishing photographs that appear on pages 8-10 of the environmental assessment.] It is interesting that captions on two of the photographs refer to "unauthorized tracks" and "unauthorized off road vehicle use" since there is no formal travel plan for Belle Fourche Reservoir at this time. There are posted speed limit signs on the road to Rocky Point and numerous "motor vehicles restricted to designated road" signs scattered around the reservoir. However, when I asked a Bureau of Reclamation staff person for a definition of a "designated road" I could not be given an answer. I was told however the Bureau had not issued a public notice regarding road use at Belle Fourche Reservoir or published road use regulations in the Federal Register as specified in 43 CFR420.29. 5 [A question that comes to mind is, how can the Bureau identify "unauthorized vehicle use" when the public has not been given any notices or information on which roads or areas are open for travel?]

6 [One photo identifies "shoreline litter" and suggests this is creating a sanitation problem. However, as per the USGS findings in 1991 (page 56 of the assessment) water quality at Belle Fourche Reservoir is satisfactory.]

The photo showing a full dumpster, indicates to me a concern and willingness by the public to cooperate and participate in any litter control program available. If the full dumpster is perceived as a problem, why not schedule more frequent garbage pickups or place a second dumpster at the site?

In the Environmental Consequences section, page 53 of the assessment, it states "bank erosion would continue" with alternatives A, B, and C but there is no mention of bank erosion with the preferred alternative D suggesting to the reviewer something is being planned to correct this problem. However, when I pointed out this omission to a Bureau staff person, I was told that nothing would be done to stabilize the banks with the preferred alternative either. 7 [In my opinion, bank erosion from wave action is the most serious threat to resource damage and soil erosion but there are no provisions in any of the alternatives for dealing with this problem.]

8 [It is difficult for me to understand or follow your rationale in stating the no action alternative would have a "adverse impact on low-income populations" in the environmental justice section]

of the assessment on page 102.] As I understand the situation, with the current primitive recreation (motorized) designation self contained camp units are not required nor are any camping fees collected. With your preferred alternative, self contained units would be required in the primitive campsites and fees would be collected in the developed sites, which in my way of thinking would be an adverse impact on low-income populations.

9 [In the cumulative impact section of the assessment you states the increase in use and roads have had a "significant cumulative impact on soils around the reservoir". However, Reclamation does not consider sedimentation an issue in the reservoir at this time when over 167,000 visitors use the Reservoir each year.]

In my opinion, Alternative A (no action) is the best management strategy for Belle Fourche Reservoir for the following reasons:

- 10 [1. It is the overwhelming preference by the public as indicated in Appendix A of the assessment.
2. The EA does not document a need or justification for making the public lands around Belle Fourche Reservoir into a Wildlife Management Area.
 3. Today, the reservoir and lake shore are environmentally sound after some 80 plus years of public use in a primitive recreation (motorized) management status.
 4. There has never been a formal Travel Management Plan prepared or instituted at Belle Fourche Reservoir. Therefore, the public has no information on where motor vehicles can or can not be used. Signing on some roads around the reservoir state "motor vehicles restricted to designated roads" but during a recent visit to the Bureau office in Rapid City I could not learn if a "designated road" was a graveled road, improved road, road on a map or two wheel tracks across the prairie to someone's favorite fishing spot. Even though notices and information on road use is lacking, the environmental impacts resulting from motor vehicle use, in my opinion is minimal.
 5. More resource damage and soil disturbance will occur with the preferred alternative proposed developments than has occurred in the past 80 years of public use.
 6. Wildlife and the habitat on the public lands around Belle Fourche Reservoir is currently healthy and thriving. In the environmental assessment it states regarding mule deer populations "numbers have been increasing in recent years and mature bucks are common. Also, antelope populations are stable and so far as is known, small mammals and bird populations are also satisfactory.
 7. No action affords senior citizens and handicapped fishermen

access to the entire reservoir shore line.

8. How can you justify spending \$700,000 in development costs and \$86,000 in annual operating and maintenance costs on a reservoir that fluctuates drastically and may not afford the public any recreation opportunities on some dry years?

9. I inspected the west, south and east shore of Belle Fourche Reservoir on January 9, 2003 and found it surprising litter free after an excess of 167,000 visitors (2000 visitation) had enjoyed a recreation experience there]

10. In my opinion this is a clear case of "if it isn't broke don't fix it".

Sincerely,

David D. Ruff
David D. Ruff
3040 Ridge Road
Spearfish, SD 57783

phone (605)722-7147

Response to David D. Ruff

1. Please see Alternative D, Modified in the final EA/RMP. This alternative now includes numerous shore fishing access locations. It also provides developed and primitive camping.
2. Your letter states that you “fail to find justification for changing the current primitive recreation (motorized) status to a wildlife management area.” We would like to clarify that currently there are no official land use category designations at the reservoir. The only prior plan for the reservoir is a map developed in 1961 that shows proposed recreation developments (see Chapter 1, Management History). Alternative A describes the land according to land use category designations as a means of comparison only. Implementation of any of the action alternatives would not “change” a current designation, but would create one. We realize that this was not made clear in the document and have clarified that under “Alternative A”, No Action.

The primary purpose of the RMP is to protect and manage lands and resources associated with Belle Fourche Reservoir consistent with the authorized purposes of the reservoir which include irrigation, fish, wildlife, and recreation with irrigation as the primary authorized use. The overall purpose of an RMP includes consideration of the needs of the public, recognizing that there are constraints that limit meeting these needs. Alternative D, Modified and the amount of Wildlife Management Area it contains was designed to meet the wide variety of issues and concerns raised during the public scoping period for the RMP. The issues you list are only a few of the five pages of issues and concerns given in Appendix A.

3. The Final EA/RMP acknowledges that approximately 125 acres of native prairie would be impacted by campsite development and recreation improvements (page 90). The 357 acres you refer to is the amount of developed recreation area listed under the draft Alternative D. The land use category designation “Developed Recreation” does not imply that every acre would be disturbed or developed, it means that recreation developments such as campgrounds or comfort stations could occur in the area.
4. The photographs on pages 8-10 were intended to illustrate the landscape, irrigation use, issues, and resources of the reservoir.
5. We appreciate your comment on the need to inform the public which roads are open at the reservoir. We intend to do this as part of implementation of Alternative D, Modified. The tracks and off-road vehicle use is referred to as unauthorized because it has not been authorized as indicated in 43 CFR 420 (page 38). The fact that a travel plan has not been developed is pointed out on page 9 of the final EA/RMP.

6. The photo on question is titled “Sanitation/Litter” and refers to outdated outhouses, the need for trash containers, and shoreline litter. Sanitation is used as a general term to refer to all waste problems at the reservoir, not specifically water quality.

7. Bank erosion is not desirable, yet it is a necessary consequence of storing irrigation water in the reservoir. Bank erosion is addressed in the RMP because it limits the potential for recreation development in areas and can pose a safety hazard. The discussion on bank erosion in the environmental consequences section of the final EA/RMP has been revised based on this fact. Alternative C in the Draft EA/RMP stated that bank stabilization projects may occur at several locations (page 28, Draft EA/RMP). This proposal has been included in “Alternative D, Modified”.

It is important to note that bank stabilization projects are very expensive, and can only be accomplished if funding is available.

8. This statement has been clarified in the Final EA/RMP on page 104. Also, under Alternative D, Modified, vault toilets will be provided in the designated primitive camping sites. Any fees charged will be consistent with other State and Federal fees charged in the area.

9. Page 57 in the Draft EA/RMP discusses inorganic turbidity as a moderate water quality problem in the reservoir. It acknowledges sedimentation does occur in the reservoir, but is a slow process. The reservoir continues to support the beneficial uses that have been assigned to it.

10. Many of the 10 items you list in this section have been addressed above. Responses are provided here to numbers 8 and 9.

10-8- Visitor use, particularly fishing, continues and sometimes even increases as water levels recede in the reservoir.

10-9- In late 2002 a litter pick-up effort resulted in the removal of 10 truckloads of trash from the west side of the reservoir.

From: Valerie Ryan
5315 Airport RD
Spearfish SD 57783
vryan@matb.com
1-21-03

OFFICIAL FILE COPY RECEIVED		
JAN 22 2003		
REPLY:	YES	NO
INFO. COPY TO:		
DATE	INITIAL	TO
1/22/03	JS	
CLASSIFICATION		
CONTROL		
ORDER		

Dear Faye,

1 [I was very disappointed not to receive any information on your latest plans involving Orman Dam, and to find out that not hardly anyone did. It seems to say that you don't really want any input.]

Since I did not receive the information myself its kind of hard to comment but I feel I must.

2 [Please do not shut off most of the lake as I understand with only one camping area and 2 day use areas.] Not everyone owns a boat!
3 [I do not see any point in having a 4 lane road to the boat dock especially with such limited use.] It

sounds like a good place for the Belle Fourche Kids to drag race.
4 [I understand you want to close off parts of the lake for wildlife. I can see this but please don't close off all of the east side.]

5 [This is the only lake in the area

where we can have primitive camping & camp near the lake, like a lot of us enjoy. It seems we are being punished for the wrongs of a few people. We always pick up garbage & leave the area cleaner than we find it.
° [Improvement could be made on some of the other roads & people would stay on them.]

This past year was a prime example of why improvements would be such a waste. The water level is so low that we got stuck at the boat dock in our 4 wheel drive on Labor Day while trying to load our boat. Needless to say there were very few people at the lake. [I understand it is for irrigation and should remain so! but what good is a fancy campground & highway under these conditions.]

Please don't waste a lot of money on something very few people want.

Thank you for your time.

Valerie Ryan
605-642-2396

Response to Valerie Ryan

1. We have added your name to our mailing list for the RMP. We worked to inform the public and receive input on the RMP through open houses, newsletters, and newspaper articles and apologize if you did not receive information on the RMP in the past.
2. Alternative D, Modified includes improved access roads around much of the reservoir, including the east side and camping at five locations around the reservoir.
3. The road to the boat dock on Rocky Point will not be four lanes. It will be a two lane road.
4. Please see our response to number two.
5. Primitive camping will still be permitted at the reservoir under the selected alternative. However, these sites will be designated to allow us to better manage camping at the reservoir.
6. We agree with your observation that improved roads discourage off-road travel and intend to improve the roads shown on Alternative D, Modified.
7. Fluctuations in water levels are a regular occurrence at the reservoir, especially in the late summer. Recreation developments will be planned with this in mind.

Dear Faye Streier

We are writting concerning the Belle Fourche Reservoir

1 [We feel plan D is way to restrictive. We feel if any changes have to be made, that plan B is the best alternative.]

2 [The Belle Fourche Reservoir is the only place that people can go camping without any restrictions. How do you expect people to pay for campsites when the water levels drop as low as 37% as it did this passed summer.]

The reservoir has met the needs of the people since the day it was built. My family has been going there for over 50 years and feel there is no need to change a thing.

There is a picture in your booklet of a dumpster overfilled with garbage, at least people are putting their trash in it, maybe someone needs to go out and empty it!!

3 [Under age drinking is the parents, and law enforcements problem. Do you feel having designated campsites will control teenagers from going out there to drink?]

I feel the Bureau of Reclamation is taking away the rights of the Black Hills Citizens. This is suppose to be a free country, and you environmentalist just keep taking more away.

OFFICIAL FILE COPY RECEIVED		
JAN 22 2003		
REPLY:	YES	NO
COPY TO:		
DATE	INITIAL	TO
1/22/03	FS	
PL NO		

This is the only lake we like to camp at because, all the other lakes in the hills have to many restrictions, regarding everything from where you park, to what time you go to bed.

We enjoy our ATV's and our freedom to ride them. When we leave we take everything with us and you cannot tell someones been camping there.

If the Bureau of Reclamation has no problem taking away the freedom of the American People, go ahead with your plans.

Sincerely,

The Ryans, John & Jolene



Ms. Jolene Ryan
602 Meado St.
Whitewood, SD 57793-2115



Response to John and Jolene Ryan

1. Alternative D, Modified, is very similar to Alternative B. The acreages of land use categories are very similar, and it provides developed and primitive camping. It includes improved designated roads and access to much of the reservoir lands.

2. The lack of restrictions has created a variety of management problems at the reservoir in recent years. Chapter 1, Management History describes the return of 1020 acres to Reclamation by a managing partner because of lack of regulations and designated roads and campsites. Without a managing partner, Reclamation has very limited ability to manage areas for Recreation (see Chapter 1, “Reclamation and Managing Partners”).

The primary use of the reservoir is for irrigation, and fluctuating water levels are common. However, recreation use of the area continues to increase. Camping fees will help to offset some of the cost of maintaining recreation areas for public use.

3. We agree that designated campsites alone will not solve the problem of underage drinking at the reservoir. We think that a combination of enforceable regulations, regular law enforcement, and designated roads, camping, and parking areas will all help in eliminating this activity at the reservoir.



OFFICIAL FILE COPY RECEIVED		
JAN 23 2003		
REPLY:	YES	NO
INFO. COPY TO:		
DATE	INITIAL	TO
1/23/03	J.S.	
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER I.D.		

United State Department of the Interior
Bureau of Reclamation
Rapid City Field Office
515 9th Street, Room 101
Rapid City, SD 57701

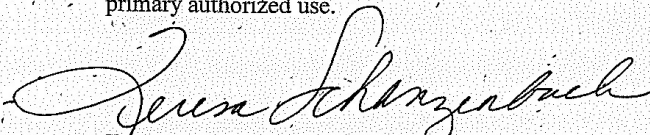
January 21, 2003

To whom it may Concern:

The Belle Fourche Economic Development Corporation has reviewed the Environmental Assessment and Resource Management Plan (EA/RMP) for the Belle Fourche Reservoir and supports the proposed Alternative D option.

This plan will boost economic development to the Northern Black Hills region while providing maximum protection and enhancement of natural resources and the scenic qualities of the reservoir. This plan will also provide both developed and primitive recreation areas.

We understand the purpose of this action is to protect and manage lands and resources associated with Belle Fourche Reservoir consistent with the authorized purposes of the reservoir, which include irrigation, fish, wildlife and recreation with irrigation as the primary authorized use.



Teresa Schanzenbach, Executive Director
Belle Fourche Economic Development Corp.

Belle Fourche Chamber of Commerce
Belle Fourche Development Corp.
415 Fifth Avenue
Belle Fourche, SD 57717
Phone (605) 892-2676
Fax (605) 892-4633
chamber@bellefourche.org
www.bellefourche.org

Black Hills Community Economic Development, Inc.

P.O. BOX 218 • STURGIS, SOUTH DAKOTA 57785-0218

PHONE (605) 347-5837 • FAX (605) 347-5999

United States Department of the Interior
Bureau of Reclamation
Rapid City Field Office
515 9th Street, Room 101
Rapid City, SD 57701

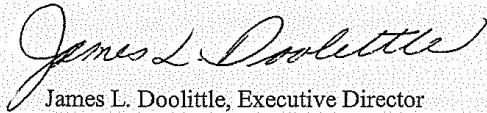
January 22, 2003

To whom it may Concern:

Black Hills Community Economic Development, Inc. fully supports the proposed Alternative D option for the Belle Fourche Reservoir Environmental Assessment and Resource Management Plan (EA/RMP) described in the Bureau of Reclamation's draft.

This plan will boost economic development to the Northern Black Hills region while providing maximum protection and enhancement of natural resources and the scenic qualities of the reservoir. This plan will also provide both developed and primitive recreation areas.

- 1 [We understand the purpose of this action is to protect and manage lands and resources associated with Belle Fourche Reservoir consistent with the authorized purposes of the reservoir, which include irrigation, fish, wildlife and recreation with irrigation as the primary authorized use.]


James L. Doolittle, Executive Director

C: Board of Directors

OFFICIAL FILE COPY RECEIVED		
JAN 23 2003		
REPLY:	YES	NO
INFO. COPY TO:		
DATE	INITIAL	TO
1/23/03	JS	
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER I.D.		

"Promoting Economic Development in the Communities of the Black Hills"

Response to Black Hills Community Economic Development

1. We also received your second letter of February 12, 2003, after the end of the public comment period. This letter states your support of irrigation as the primary authorized use for Belle Fourche Reservoir.

US Department of Interior
Faye Streir
515 9th Street
Rapid City SD 57701

Re: Belle Fourche Reservoir

OFFICIAL FILE COPY RECEIVED		
JAN 24 2003		
REPLY	YES	NO
INFO. COPY TO:		
DATE	INITIAL	TO
CLASSIFICATION		
PROJECT		
CONTROL NO.		

We appreciated receiving your draft statement. We have attended all of your open-house meetings and have sent in written ideas after each. However, we were not prepared for the results as published.

1 Who now uses this area for recreation? Fishermen, boaters and campers. They must be comfortable with the current conditions, or they would be going elsewhere. Your own charts show a tremendous increase in useage. However, two of your tables show a large percentage of those interviewed prefer developed campsites. These replies could not have come from Orman Dam users - there are no developed campsites so how could 28% have said this? You also state that a great percentage of state residents prefer developed over primitive. Yet another chart shows an increase of over 100,000 users at Orman. We take this to mean that the multitudes using the Lake are happy with current conditions and your case for desired developed campsites is faulted.

Under Alternative A - Most of the over 100,000 current users would go with this plan or they would not be going there now. Most just wanted a few more dumpsters and an occational toilet and a tad of gravel on the roads.

Alternative B - More campsites are available under this plan but it states if Reclamation does not have funds, then they would close the area to all camping and public use. If there were funds, dumpsters and toilets would be added. This is not all bad.

2 Alternative C - Two big plus statements: Work on bank stabilization and on tree planting. These plans are great. Why would you pave the road from the boat ramp to Gaden's? Little wonder this plan has so much more cost involved. Why would you use funds to provide for a concessionaire? This is not needed. Cut those two costly items from the plan and your cost is back in line with your choice of D. Plan C covers more dumpsters, toilets, erosion, low water trails - all great plans. This provides more primitive areas, more shore line access.

3 Alternative D - You will kill fishing and camping as generations have know it and you will prevent future generations from having the special thrill of sitting in the shade of the camper, watching your pole, sharing stories with fellow campers, learning about nature and wildlife. The disabled grandparents won't be able to take the kids fishing - there will be no road access to any good fishing spots. There won't be anymore group campouts among family and friends where memories are made for a lifetime. What is the problem with primitive camps along more of the shore line? They are not causing the bank erosion and plan D does not adrees any stabilization as plan C does - another cost added to plan C

making it look less desirable. It shows "some" dumpsters would be placed at parking areas. One area on the northwest of Gadens lists a 20 vehicle maximum under D. That would limit the area to about one or two families, because there are now mega times that number in that area. This is just not reasonable. Most of the "off road" problems by passenger vehicles occur during muddy times because there have never been culverts placed on the side roads. Surely this is less costly than paving the road from Rocky to Gadens - but are you just stacking costs on C so it looks less feasible? Take a tour sometime after the National Guard has been there for training - usually in the spring and it rains. They tear up acres and acres of ground with their giant vehicles. Don't blame everything on the campers and fishermen. Plan D says most roads would be closed. Plan D states that primitive campers may have to seek this experience elsewhere. Why? You and the state are taking over every waterhole in the state - where are they to go? And why must they go elsewhere now? Is this entire project to provide a fancy developed area for a chosen few with fancy boats and motorhomes? Look at your charts. Read the limited income of most of the residents using the area. They do not need or want anything fancy. For many this is their only family recreation because they don't have the funds for distant vacations, summer homes, etc. This is an attack on low income, disabled, elderly. Why are you talking of investing funds to improve and upgrade an area - and then cutting severely the available spots to fish or camp?

You have probably invested a half-million into your research and planning to date. However, we are saddened to see that D is your choice. We feel it is too restrictive. We cannot agree with your results after reading your charts - they seem to contradict themselves. Cut out the paving to Gaden's and the store listed in C, get that cost down to the D level, and still keep the Lake available to the over 100,000 who now use the area. C covers the bank erosion, a serious problem, and covers tree planting. These sound like good resource management plans.

We await further word from your office.



Mary Wendt
HC 30 Box 134
Belle Fourche SD 57717

Response to Mary Wendt

1. The table you referred to was included in the draft EA/RMP to show statewide trends, not just those at Belle Fourche Reservoir. We have clarified this information in the document to more clearly present these trends.
2. Under Alternative D, Modified, we propose to pave only the road from U.S. Highway 212 to the boat ramp at Rocky Point, not the road to Gaden's Point. We also do not plan on a concession at this time.
3. Alternative D has been modified to provide road access to favored fishing sites around the reservoir. Roads will be improved to help prevent off-road travel and erosion. It also provides for group camping at several locations. However, it concentrates primitive camping at specific locations on the reservoir, rather than along the entire shoreline. This widely dispersed primitive camping is difficult to manage and is not compatible with the Wildlife Management Area designation.

Please see response number 3 to Ken Edel regarding the statement on page 76 of the draft EA/RMP.

OFFICIAL FILE COPY RECEIVED		
JAN 24 2003		
REPLY:	YES	NO
INFO. COPY TO:		
DATE	INITIAL	TO
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER I.D.		

January 22, 2003

Faye Streier
Bureau of Reclamation
Rapid City Field Office
515 9th Street, Room 101
Rapid City, SD 57701

RE: Belle Fourche Reservoir RMP

Dear Faye;

I am writing in response to the different alternatives proposed for the Belle Fourche Reservoir. I agree with proceeding with your preferred alternative, D. If demand is high enough, additional services could be added in future years, as described by Alternative C. With the higher usage, I think it's about 5 years past time to do these improvements. We started seriously talking about these issues 4 years ago, and I'm glad that we're closer to a conclusion and implementation.

Thanks for all your hard work on this project.

Sincerely,



Wade, Velda, Nathaniel and Sam Pehl
1830 8th Ave.
Belle Fourche, SD 57717

Response to Wade Pehl

1. Alternative D, Modified, calls for an increase in developed camping and services if needed.



DEPARTMENT OF GAME, FISH AND PARKS

Foss Building
523 East Capitol
Pierre, South Dakota 57501-3182

OFFICIAL FILE COPY RECEIVED		
JAN 31 2003		
REPLY:	YES	NO
INFO. COPY TO:		
DATE	INITIAL	TO
1/3/03	JS	
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER I.D.		

January 28, 2003

Faye Streier
Rapid City Field Office
US Dept of the Interior
Bureau of Reclamation
515th 9th Street
Room 101
Rapid City, South Dakota 57701

Dear Faye:

Appropriate staff of the Department of Game, Fish and Parks have reviewed the "Draft Environmental Assessment and Resource Management Plan Belle Fourche Reservoir" document. This document is dated December, 2002. As a result of that review we have several comments to make relative to this document. These comments constitute the official comments of the Department.

We wish to compliment the Bureau of Reclamation for addressing the problems associated with the ever increasing recreational use and natural resource impacts at Belle Fourche Reservoir. Additionally, your efforts to restrict off road vehicle use are a commendable objective. It is evident to us that considerable time and effort was spent by the Bureau on these issues.

- 1 [From a recreation, wildlife and fisheries perspective we can support Alternative D (the preferred alternative) with certain modifications.

The first modification we submit would be to prohibit camping everywhere but on Rocky Point. We understand that there may be a considerable amount of pressure from the public to allow primitive camping in various other locations.

Alternative D calls for developed recreation on Rocky Point, with smaller primitive recreation areas on both the west and east sides of the reservoir. If such primitive camping were to be allowed, we believe it would be more advantageous to allow such

camping on Gaden's Point, where a specific number of designated camping sites could be maintained based on the carrying capacity of the area, rather than on the east side of the reservoir. We feel that it would be much better defined and enforced to make a clear definition between the two sides of the reservoir. In this way, the Parks & Recreation Division could focus all of their attention on the west side where services are provided and fees are being charged. Fees would allow us to provide garbage collection, security, sanitary facilities, etc. Having all of this in one area would make management costs effective. Having camping on the east side would be too costly to manage and would spread our resources too thin, thereby not doing justice to either area. At the same time, if camping were to expand beyond Rocky Point, the Parks & Recreation Division needs to retain the flexibility to set fees as appropriate.

- 2 [It is our opinion that the east side should be managed as a wildlife area with no vehicular traffic off designated roads and adequate fishing access parking as would the area northwest of Gaden's Point. Camping would not be allowed in either of these areas.]
- 3 [If a portion of Rocky Point is developed as a modern campground, we would want to have the flexibility to add that facility to the State's Campground Reservation System.] By utilizing the reservation system, all users have equal access to camping pads and visitors traveling to the area have the piece of mind their campsite will be available when they arrive. The reservation system gives users the advantage of knowing they have a campsite waiting for them once they arrive. Managers have noticed that where reservations are taken, less staff time is needed to register campers and the staff time saved can be concentrated on facility operations and maintenance.

Shoreline angling has become an important part of the Belle Fourche Reservoir recreational experience. Recent surveys by the Department of Game, Fish and Parks show 39,768 angling hours in a single season. Alternative D does not provide adequate shoreline access for shoreline fishermen. A large portion of spring shoreline angling occurs along the canal area. A gravel road along either side or (both) of the canal with pull-offs would greatly increase angler access in this area. There are several areas on the reservoir where shoreline-fishing access could be accommodated by simply extending the road and providing a small parking lot and turn-around.

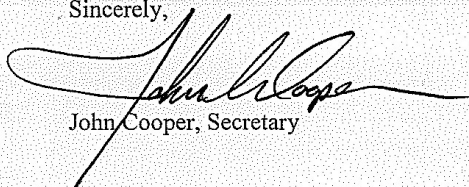
The Belle Fourche Reservoir was probably the most utilized and successful fishery in western South Dakota during 2002. Over the past seven years there has been increasing use of the reservoir by boating anglers. In 2002, boating anglers spent 57,816 hours on the reservoir. Under Alternative D, the only boat ramp facility will be within the fee area at Rocky Point. A minimum of one (preferably two) non-fee boat access areas are needed in addition to the boat ramp at Rocky Point. This would provide boaters more access to the reservoir, extra needed parking spaces for truck/trailer units and help alleviate congestion of loading/unloading boats at a single ramp, as well as provide a safer alternative for loading during strong winds impacting one site versus another.

- 6 [The need for fish screens on the outlet canals still needs to be determined. Although screens will not stop all fish from moving into the irrigation canals it would prevent large

numbers of game fish from leaving the reservoir. During the fall of 2002, High Plains Anglers assisted GF&P in returning a substantial number of fish from the canals back into the reservoir. This is a time consuming and difficult job that could be alleviated by the installation of fish screens.]

The Department of Game, Fish and Parks appreciates your considerable effort in the development of the Draft Environmental Assessment and Resource Management Plan and thank you for the opportunity to comment.

Sincerely,

A handwritten signature in black ink, appearing to read "John Cooper", with a large, sweeping flourish extending to the right.

John Cooper, Secretary

Response to South Dakota Department of Game, Fish and Parks

1. We recognize the difficulties of managing camping that is widely dispersed around the reservoir. Chapter 3, Visual and Recreation Resources, Environmental Consequences, describes these difficulties. However, we have received a great deal of public input requesting that primitive camping be retained on both the west and east sides of the reservoir. Alternative D, Modified is intended to address the problem of dispersed primitive camping by consolidating it in specific locations. Designated primitive camping is provided on Gaden's Point. It also would be provided on the east side of the reservoir. This alternative includes a fee for all camping, proportional to the services provided.
2. Under Alternative D, Modified, much of the east side of the reservoir is Wildlife Management Area. Your suggestions on designated roads, fishing access parking, and camping restrictions are incorporated into that alternative.
3. A portion of the campsites on Rocky Point would be added to the State Reservation system.
4. Alternative D has been modified to provide adequate fishing access. We have incorporated your suggestions on access at the inlet canal, and on parking areas.
5. Alternative D, Modified, includes a non-fee boat access area at another suitable location on the on the reservoir.
6. We would like to work with you and the Belle Fourche Irrigation District on providing fish screens.

**BELLE FOURCHE IRRIGATION DISTRICT
209 DARTMOUTH
P.O. BOX 225
NEWELL, SD 57760
(605) 456-2541**

January 10, 2003

Subject: Belle Fourche Reservoir
Resource Management Plan

Dear Irrigator:

The U.S. Bureau of Reclamation has drafted an Environmental Assessment (EA) and a Resource Management Plan (RMP) for the Belle Fourche Reservoir (Orman Dam). After reviewing the draft RMP, the Belle Fourche Irrigation District Board of Directors strongly support Alternative A. Alternative A is to keep the reservoir the same with "no action" taken to change current management. Alternatives B, C, and D allow for increased stages of development and recreation.

Alternative A - No Action
Alternative B - Minimum Facilities
Alternative C - Recreation Emphasis
Alternative D - Fish, Wildlife, & Recreation

¹ In order to protect the priority of irrigation at Orman Dam, the Directors urge you to sign the enclosed post card and mail to the Bureau of Reclamation. You need to mail the card by January 22nd so it can be received before the January 24th closure date. If you would like to review the full RMP, there are copies at local libraries, Reclamation Rapid City office, and at the District Office.

Sincerely,


Renel A. Hall-Beck
Project Manager

**Belle Fourche Reservoir
Resource Management Plan**

I support Alternative A

Alternative A provides for no changes at the Belle Fourche Reservoir.

Name: _____

Address: _____

* Mail this by 1/22/03

Response to Belle Fourche Irrigators

1. Irrigation remains the primary authorized use of water at Belle Fourche Reservoir. The EA/RMP does not propose any activities that would change this use. Please see Chapter 1 for statements regarding this use and the contract that is in place for irrigation water. Under Alternative A, recreation use continues to increase at the reservoir. The reservoir lands lack even basic facilities to handle this use. Alternative D, Modified, was designed to provide for a range of uses that protect and manage the lands at the reservoir, while allowing visitor use.