UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
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Ref: 8EPR-EP

Mr. Art Compton, Division Administrator
Planning, Prevention and Assistance Division
Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Re: TMDL Approvals
Sun River TMDL Planning Area

Dear Mr. Compton:

We have completed our review of the total maximum daily loads (TMDLs) as submitted by your office for the Swan Lake TMDL Planning Area (TPA). The TMDLs are included in the document entitled Water Quality Restoration Plan and Total Maximum Daily Loads for the Sun River Planning Area (Montana Department of Environmental Quality) transmitted to us for review and approval in correspondence dated December 23, 2004 and signed by you. In accordance with the Clean Water Act (33 U.S.C. 1251 *et. seq.*), we approve all aspects of the TMDLs as developed for the Swan Lake TPA. Enclosure 1 to this letter provides a summary of the elements of the TMDLs and Enclosure 2 provides details of our review of the TMDLs.

Based on our review, we feel the separate TMDL elements listed in Enclosure 2 adequately address the pollutants of concern, taking into consideration seasonal variation and a margin of safety. In approving these TMDLs, EPA affirms that the TMDLs have been established at a level necessary to attain and maintain the applicable water quality standards and has the necessary components of an approvable TMDL.

EPA has been in contact with the United States Fish and Wildlife Service (FWS) regarding whether and, if so, how EPA's approval of the Sun River TPA TMDLs may affect the continued existence of any endangered or threatened species listed under the Endangered Species Act (ESA) or the designated critical habitat of any such species. EPA has not determined that today's approval may have such an effect. Therefore, consistent with the terms of a consent decree in the lawsuit of Friends of the Wild Swan, *et al.*, v. U.S. Environmental Protection Agency, *et al.*, Civil Action No. CV99-87-M-LBE, United States District Court for the District of Montana, Missoula Division, EPA has decided to approve these TMDLs contingent upon the outcome of consultation with the FWS.

Thank you for your submittal. If you have any questions concerning this approval, feel free to contact Ron Steg of our Helena staff at (406) 457-5024.

Sincerely,

Max H. Dodson
Assistant Regional Administrator
Ecosystems Protection and Remediation

Enclosures

cc: Jack R. Tuholske, Attorney
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Enclosure 1

APPROVED TMDLS

17 TMDLs
5 Determinations that no TMDL is needed
4 TMDLs yet to be developed

Waterbody Name*	**TMDL Parameter/ Pollutant (*based on 1996 and 2002 lists*)**	**Water Quality Goal/Endpoint**	**TMDL**	**WLA LA**	**Supporting Documentation** (not an exhaustive list of supporting documents)
Upper Sun River* MT41K001_010	thermal modification*	75^{O}F Daily max 73^{O}F Daily max during 3 consecutive days 66^{O}F 7-day avg. temp	**TMDL** (daily) (kilocalories/second) = Flow (cfs) x 676 **TMDL** (weekly) = Flow (cfs) x 32351	**WLA** (Vaugn POTW MT0021440) = no increase in thermal load **LA =** increase shading by 22% plus grazing/irrigation BMPs	Water Quality Restoration Plan and Total Maximum Daily Loads for the Sun River Planning Area; December 2004; Montana DEQ SSTEMP and SSTEMP models used
	siltation*	eroding banks < 10% entrenchment ratio 1.4 - 2.2 14 clinger taxa % of sample filter feeders <20% less than 10 mg/l at flows less than 200 cfs	**TMDL** = 35,454 tons/year	**WLA** = 28 tons/year (no reasonable potential) **LA** = 35,426 tons/year	" "
	suspended sediment*	" "	" "	" "	" "
	nutrients*	Justification provided for no need of a nutrient TMDL. Water quality standards being met.			" "

Waterbody Name*	**TMDL Parameter/ Pollutant (*based on 1996 and 2002 lists*)**	**Water Quality Goal/Endpoint**	**TMDL**	**WLA LA**	**Supporting Documentation** (not an exhaustive list of supporting documents)
Lower Sun River* MT41K001_020	thermal modification*	Justification provided for no need of a thermal TMDL. Water quality standards being met.			" "
	siltation*	eroding banks < 10% suspended sediment concentration < 42 mg/l (75 percentile)	**TMDL** = 76,938 tons/year	**WLA** = 33 tons/year (no reasonable potential) **LA** = 76,905 tons/year	" "
	suspended sediment*	" "	" "	" "	" "
	TDS*	Justification provided for no need of a TDS TMDL. Water quality standards being met.			" "
	nutrients* (nitrogen)	total nitrogen = 650 ug/l	**TMDL** (lbs/day) = 2.959 x flow (cfs)	**WLA** = 10% of TMDL **LA** = 57% reduction	" "
	nutrients* (phosphorus)	total phosphorus = 50 ug/l	**TMDL** (lbs/day) = 0.269 x flow (cfs)	**WLA** = 10% of TMDL **LA** = 45% reduction	" "

Waterbody Name*	**TMDL Parameter/ Pollutant (*based on 1996 and 2002 lists*)**	**Water Quality Goal/Endpoint**	**TMDL**	**WLA LA**	**Supporting Documentation** (not an exhaustive list of supporting documents)
Muddy Creek* MT41K002_010	thermal modification*	75^{O}F Daily max 73^{O}F Daily max during 3 consecutive days 66^{O}F 7-day avg. temp	**TMDL** (daily) (kilocalories/second) = Flow (cfs) x 676 **TMDL** (weekly) (megacalories/week) = Flow (cfs) x 32351	**WLA** = 0 **LA** = irrigation BMPs	" "
	suspended sediment*	Proper Functioning Condition for 85% of stream length Sheer stress comparable to Rosgen C or E channel	**TMDL** = 29,959 tons/year (3 year average)	**WLA** = 0 **LA** = 29,959 tons/year	" "
	TDS*	960 mg/l year round 660 mg/l (May 1-Sep 30) SAR < 4.5 (May -Sept)	**TMDL** (1000lbs/day) = Flow (cfs) x 5.164	**WLA** = 0 **LA** = no increase (irrigated crop) 20% decrease (fallow crop)	" "
	nutrients* (nitrogen)	total nitrogen = 650 ug/l	**TMDL** (lbs/day) = 3.497 x flow (cfs)	**WLA** = 0 **LA** = 66% reduction	" "
	nutrients* (phosphorus)	total phosphorus = 50 ug/l	**TMDL** (lbs/day) = 0.269 x flow (cfs)	**WLA** = 0 **LA** = 83% reduction	
	pH*	Justification provided for no need of a pH TMDL. Water quality standards being met.			" "
	selenium (not on list)	5 ug/l chronic aquatic life 20 ug/l acute aquatic life 50 ug/l human health	**TMDL** (lbs/day) = 0.0269 x flow (cfs)	**WLA** = 0 **LA** = 35% reduction Feb-Apr	

Waterbody Name*	**TMDL Parameter/ Pollutant (*based on 1996 and 2002 lists*)**	**Water Quality Goal/Endpoint**	**TMDL**	**WLA LA**	**Supporting Documentation** (not an exhaustive list of supporting documents)
Ford Creek* MT41K002_020	siltation*	55% shrub species cover at bank full Rosgen C channel BEHI < 10 entrenchment ratio > 2.6 14 clinger taxa	**TMDL** = 966 tons/year	**WLA** = 0 **LA** = 966 tons/year	" "
	nutrients* (nitrogen)	Justification provided for no need of a nutrient TMDL. Water quality standards being met.			" "
Freezeout Lake* MT41K004_030	TDS*	2,264 mg/l TDS	**TMDL** = 155,056 lbs/day TDS	**WLA** (Farifield POTW MTG580003) = 1130 lb/day **LA** = grazing/irrigation BMPs	" "
	sulfates* (sulfates included in TDS)	" "	" "	" "	
	nitrogen*	Further study needed. Waterbody/pollutant stays on 303d list.			" "
	organic enrichment/DO*	Further study needed. Waterbody/pollutant stays on 303d list.			" "

Waterbody Name*	**TMDL Parameter/ Pollutant (*based on 1996 and 2002 lists*)**	**Water Quality Goal/Endpoint**	**TMDL**	**WLA LA**	**Supporting Documentation** (not an exhaustive list of supporting documents)
	metals* (selenium)	5 ug/l chronic aquatic life 20 ug/l acute aquatic life 50 ug/l human health	**TMDL** = 0.55 lbs/day	**WLA** (Farifield POTW MTG580003) = 0.02 lb/yr **LA** = 5 lb/yr fallow crop 35 lb/yr irrigated land	" "
Gibson Reservoir* MT41K004_020	siltation*	Further study needed. Waterbody/pollutant stays on 303d list.			" "
	suspended sediment*	Further study needed. Waterbody/pollutant stays on 303d list.			" "
Willow Creek Reservoir* MT41K004_020	Non-pollutant impairment; no TMDL required				

* An asterisk indicates the waterbody and pollutant were included on the State's Section 303(d) list of waterbodies in need of TMDLs.

Enclosure 2

TMDL Review Form

Document Name/Date:	Water Quality Restoration Plan and Total Maximum Daily Loads for the Sun River Planning Area (December 2004)
Submitted by:	Montana Department of Environmental Quality
Date Received:	January 3, 2005
Review Date:	February 22, 2005
Reviewer:	Bruce Zander (8EPR-EP)
Review of Draft or Final TMDL?	Final TMDL Formal Review

This document provides a standard format for the EPA Region VIII office to provide comments on the TMDL documents provided to the EPA for either official formal, or informal review. All TMDL documents are measured against the following 12 review criteria:

1. Water Quality Impairment Status
2. Water Quality Standards
3. Water Quality Targets
4. Significant Sources
5. Total Maximum Daily Load
6. Allocation
7. Margin of Safety and Seasonality
8. Monitoring Strategy
9. Restoration Strategy
10. Public Participation
11. Technical Analysis
12. Endangered Species Act Compliance

Each of the 12 review criteria is described below to provide the rational for the review, followed by EPA's comments. This review is intended to ensure compliance with the Clean Water Act and also to ensure that the reviewed documents are technically sound and the conclusions are technically defensible.

This review of the Sun River Planning Area TMDLs covers the following waterbody/pollutant combinations:

Waterbody Name*	TMDL Parameter/Pollutant
Upper Sun River* MT41K001_010	thermal modification*, siltation*, suspended sediment*, nutrients*
Lower Sun River* MT41K001_020	thermal modification*, siltation*, suspended sediment*, TDS*, nutrients* (nitrogen), nutrients* (phosphorus)
Muddy Creek* MT41K002_010	thermal modification*, suspended sediment*, TDS*, nutrients* (nitrogen), nutrients* (phosphorus), pH*, selenium (not on list)
Ford Creek* MT41K002_020	siltation*, nutrients* (nitrogen)
Freezeout Lake* MT41K004_030	TDS*, sulfates*, (sulfates included in TDS), nitrogen*, organic enrichment/DO*, metals* (selenium)
Gibson Reservoir* MT41K004_020	siltation*, suspended sediment*
Willow Creek Res.* MT41K004_020	Non-pollutant impairment; no TMDL required

* An asterisk indicates the waterbody and pollutant were included on the State's §303(d) list of waterbodies in need of TMDLs.

1. Water Quality Impairment Status

Criterion Description – Water Quality Impairment Status

TMDL documents must include a description of the listed water quality impairments. While the 303(d) list identifies probable causes and sources of water quality impairments, the information contained in the 303(d) list is generally not sufficiently detailed to provide the reader with an adequate understanding of the impairments. TMDL documents should include a thorough description/summary of all available water quality data such that the water quality impairments are clearly defined and linked to the impaired beneficial uses and/or appropriate water quality standards.

☑ Satisfies Criterion
☐ Satisfies Criterion with stipulations provided below that must be addressed.
☐ Satisfies Criterion. Questions or comments provided below should be considered.
☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
☐ Not a required element in this case. Comments or questions provided for informational purposes.

The TMDL document provides information regarding the basis for the original §303(d) listing of all the waterbody/pollutant combinations including the water quality standards and uses that are impaired or threatened. For each of the combinations, a discussion is provided on the current water quality status. In addition to providing information on the current impairment status of each of the combinations, it also provides references that provide further detail on the data and information used for the assessment of the subject waters and pollutants.

In the event the most current assessment of a particular waterbody/pollutant combination shows that a TMDL is no longer needed for the pollutant (e.g., because water quality standards are now being met), the TMDL document provides the appropriate analysis and basis for such a conclusion.

2. Water Quality Standards

Criterion Description – Water Quality Standards

The TMDL document must include a description of all applicable water quality standards for all affected jurisdictions. TMDLs result in maintaining and attaining water quality standards. Water quality standards are the basis from which TMDL's are established and the TMDL targets are derived, including the numeric, narrative, use classification, and antidegradation components of the standards.

☑ Satisfies Criterion
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☐ Satisfies Criterion. Questions or comments provided below should be considered.
☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
☐ Not a required element in this case. Comments or questions provided for informational purposes.

For each of the waterbody/pollutant combinations, the document provides a description of the applicable water quality standards that are to be used as a basis for making assessment determinations as well as setting targets for the TMDLs designed to implement the TMDL.

3. Water Quality Targets

Criterion Description – Water Quality Targets

Quantified targets or endpoints must be provided to address each listed pollutant/water body combination. Target values must represent achievement of applicable water quality standards and support of associated beneficial uses. For pollutants with numeric water quality standards, the numeric criteria are generally used as the TMDL target. For pollutants with narrative standards, the narrative standard must be translated into a measurable value. At a minimum, one target is required for each pollutant/water body combination. It is generally desirable, however, to include several targets that represent achievement of the standard and support of beneficial uses (e.g., for a sediment impairment issue it may be appropriate to include targets representing water column sediment such as TSS, embeddeness, stream morphology, up-slope conditions, and a measure of biota).

- ☑ Satisfies Criterion
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- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☐ Not a required element in this case. Comments or questions provided for informational purposes.

For each waterbody/pollutant combination, a target is provided which is based on state numeric water quality standards or an interpretation of the narrative provisions found in state standards.

4. Significant Sources

Criterion Description – Significant Sources

TMDLs must consider all significant sources of the stressor of concern. All sources or causes of the stressor must be identified or accounted for in some manner. The detail provided in the source assessment step drives the rigor of the allocation step. In other words, it is only possible to specifically allocate quantifiable loads or load reductions to each significant source when the relative load contribution from each source has been estimated. Ideally, therefore, the pollutant load from each significant source should be quantified. This can be accomplished using site-specific monitoring data, modeling, or application of other assessment techniques. If insufficient time or resources are available to accomplish this step, a phased/adaptive management approach can be employed so long as the approach is clearly defined in the document.

☑ Satisfies Criterion
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☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
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For each of the waterbody/pollutant combinations, the document identified significant sources. Where possible, loads were quantified by source type or by sub-watershed. In addition, where possible, a distinction was made between natural and anthropogenic-caused loadings. Much of the information on sources was based on either monitoring data or modeling results.

5. TMDL

Criterion Description – Total Maximum Daily Load

TMDLs include a quantified pollutant reduction target. According to EPA reg (see 40 C.F.R. 130.2(i)) TMDLs can be expressed as mass per unit of time, toxicity, % load reduction, or other measure. TMDLs must address, either singly or in combination, each listed pollutant/water body combination.

☑ Satisfies Criterion
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☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
☐ Not a required element in this case. Comments or questions provided for informational purposes.

For each waterbody/pollutant combination that required a TMDL, a TMDL was established with the exception of Gibson Reservoir. Gibson Reservoir will remain on the 303(d) list since further study is needed to determine true impairment status and appropriate targets. TMDLs were expressed either as a mass/time using an appropriate averaging period (e.g., annual, weekly, daily) or were expressed as a function of flow. All TMDLs were designed to achieve the corresponding water quality targets and attain applicable water quality standards.

6. Allocation

Criterion Description – Allocation

TMDLs apportion responsibility for taking actions or allocate the available assimilative capacity among the various point, nonpoint, and natural pollutant sources. Allocations may be expressed in a variety of ways such as by individual discharger, by tributary watershed, by source or land use category, by land parcel, or other appropriate scale or dividing of responsibility. A performance based allocation approach, where a detailed strategy is articulated for the application of BMPs, may also be appropriate for non point sources.

In cases where there is substantial uncertainty regarding the linkage between the proposed allocations and achievement of water quality standards, it may be necessary to employ a phased or adaptive management approach (e.g., establish a monitoring plan to determine if the proposed allocations are, in fact, leading to the desired water quality improvements).

Allocating load reductions to specific sources is generally the most contentious and politically sensitive component of the TMDL process. It is also the step in the process where management direction is provided to actually achieve the desired load reductions. In many ways, it is a prioritization of restoration activities that need to occur to restore water quality. For these reasons, every effort should be made to be as detailed as possible and also, to base all conclusions on the best available scientific principles.

☑ Satisfies Criterion
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☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
☐ Not a required element in this case. Comments or questions provided for informational purposes.

For each waterbody/pollutant combination, the document provided both wasteload allocations and load allocations, although the wasteload allocation was "0" when there were no permitted point sources contributing the pollutant of concern. In some cases, the allocations were expressed in terms of mass per time or % reduction from current loadings. In yet other cases, the allocation was based on EPA's "performance based" allocation scheme where best management practices (BMPs) were identified for nonpoint sources such that the controls were adequate to attain any applicable water quality standard.

7. Margin of Safety and Seasonality

Criterion Description – Margin of Safety/Seasonality

A margin of safety (MOS) is a required component of the TMDL that accounts for the uncertainty about the relationship between the pollutant loads and the quality of the receiving water body (303(d)(1)(c)). The MOS can be implicitly expressed by incorporating a margin of safety into conservative assumptions used to develop the TMDL. In other cases, the MOS can be built in as a separate component of the TMDL (in this case, quantitatively, a TMDL = WLA + LA + MOS). In all cases, specific documentation describing the rational for the MOS is required.

Seasonal considerations, such as critical flow periods (high flow, low flow), also need to be considered when establishing TMDLs , targets, and allocations.

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☐ Not a required element in this case. Comments or questions provided for informational purposes.

Margin of Safety For most of the waterbody/pollutant combinations, the TMDL assigned an explicit margin of safety as a percentage of the TMDL. Where there was uncertainty regarding pollutant controls and the resultant water quality, post-implementation monitoring was suggested in some instances which included adaptive management to ensure attainment of water quality standards. Finally, some of the TMDLs addressed uncertainty by relying on conservative assumptions related to the water quality target, the source assessment, and/or the conservative nature of the performance measures.

Seasonality For each waterbody/pollutant combinations, seasonality was taken into consideration in some manner. For example, TMDLs were designed to take into consideration seasonal patterns in pollutant loadings, the dynamic nature of acceptable pollutant loadings based on flow, or the need to apply certain pollutant control practices during certain times of the year.

8. Monitoring Strategy

Criterion Description – Monitoring Strategy

Many TMDL's are likely to have significant uncertainty associated with selection of appropriate numeric targets and estimates of source loadings and assimilative capacity. In these cases, a phased TMDL approach may be necessary. For Phased TMDLs, it is EPA's expectation that a monitoring plan will be included as a component of the TMDL documents to articulate the means by which the TMDL will be evaluated in the field, and to provide supplemental data in the future to address any uncertainties that may exist when the document is prepared.

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- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☐ Not a required element in this case. Comments or questions provided for informational purposes.

For each waterbody/pollutant combination, the TMDL document provided a monitoring plan. Some of the plans were conceptual in nature whereas others were fairly detailed by prescribing what type of monitorin should be performed, what parameters should be monitored, and how frequently monitoring should be performed. The purpose of the monitoring is to ensure water quality standards are being attained and to drive adaptive management decisions resulting in adjustments to water quality control practices.

9. Restoration Strategy

Criterion Description – Restoration Strategy

At a minimum, sufficient information should be provided in the TMDL document to demonstrate that if the TMDL were implemented, water quality standards would be attained or maintained. Adding additional detail regarding the proposed approach for the restoration of water quality is not currently a regulatory requirement, but is considered a value added component of a TMDL document.

- ☐ Satisfies Criterion
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☑ Not a required element in this case. Comments or questions provided for informational purposes.

A restoration strategy was provided for each waterbody/pollutant combination where a TMDL was developed. The restoration strategies provied information regarding the sources in need of control, the type of water quality measures to be put in place, and the locations within the watershed that are most in need of restoration.

10. Public Participation

Criterion Description – Public Participation

The fundamental requirement for public participation is that all stakeholders have an opportunity to be part of the process. Public participation should fit the needs of the particular TMDL.

☑ Satisfies Criterion
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☐ Satisfies Criterion. Questions or comments provided below should be considered.
☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
☐ Not a required element in this case. Comments or questions provided for informational purposes.

Montana DEQ facilitated involvement from a range of stakeholders through the period of TMDL development. In particular, DEQ collaborated with the Sun River Watershed Group throughout the process. A technical review committee made up of stakeholders had an opportunity to review and comment on the draft TMDLs. Further, the general public were given an opportunity to review and comment on the Sun River TMDLs during a 30-day public comment period as well as in a public meeting held in Great Falls. The Sun River document provided a summary of comments received as well as a responsiveness summary from MT DEQ.

11. Technical Analysis

Criterion Description – Technical Analysis

*TMDLs must be supported by an appropriate level of technical analysis. It applies to **all** of the components of a TMDL document. It is vitally important that the technical basis for **all** conclusions be articulated in a manner that is easily understandable and readily apparent to the reader. Of particular importance, the cause and effect relationship between the pollutant and impairment and between the selected targets, sources, TMDLs, and allocations needs to be supported by an appropriate level of technical analysis.*

☑ Satisfies Criterion
☐ Satisfies Criterion. Questions or comments provided below should be considered.
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☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
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The level of technical analysis surrounding water quality impairment status, the targets, TMDLs, and allocations are adequate. The conclusions are sufficiently supported by the available data, supplemental studies, and supporting literature. In large part, cause and effect relationships were demonstrated through empirical data analysis and simplified loading methods. In some cases, water quality models (e.g., SPARROW for nutrients, SSTEMP for temperature) were used to perform analyses on the extent and needed level of pollutant loading.

12. Endangered Species Act Compliance

Criterion Description – Endangered Species Act Compliance

EPA's approval of a TMDL may constitute an action subject to the provisions of Section 7 of the Endangered Species Act ("ESA"). EPA will consult, as appropriate, with the US Fish and Wildlife Service (USFWS) to determine if there is an effect on listed endangered and threatened species pertaining to EPA's approval of the TMDL. The responsibility to consult with the USFWS lies with EPA and is not a requirement under the Clean Water Act for approving TMDLs. States are encouraged, however, to participate with FWS and EPA in the consultation process and, most importantly, to document in its TMDLs the potential effects (adverse or beneficial) the TMDL may have on listed as well as candidate and proposed species under the ESA.

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☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
☑ Not a required element in this case. Comments or questions provided for informational purposes.

The EPA will consult with the US Fish and Wildlife Service under the provisions of Section 7(a)(2) of the ESA regarding its approval of these TMDLs. For now, the approval is contingent based on the outcome of such consultation.

Biological Evaluation of Proposed Total Maximum Daily Loads (TMDLs)

Montana

Summary Information

Waterbody:	Sun River, Ford Creek, Muddy Creek, Freezeout Lake	
Basin/HUC	Sun River Basin/10030104	
County(ies)	Cascade, Lewis & Clark, and Teton Counties	
Species of concern	Arctic Grayling (candidate) Bull Trout (threatened; designated critical habitat) Bald Eagle (threatened; proposed delisting) Grizzly Bear (threatened) Gray Wolf (endangered) Black-footed Ferret (endangered)	
Pollutant/Effect of Action	salinity (TDS/SC/sulfates)	Arctic Grayling.....no effect Bull Trout.....no effect Bald Eagle.....not likely to adversely affect Grizzly Bear.....not likely to adversely affect Gray Wolf.....no effect Black-footed Ferret.....no effect
Pollutant/Effect of Action	selenium	Arctic Grayling.....no effect Bull Trout.....no effect Bald Eagle.....not likely to adversely affect Grizzly Bear.....not likely to adversely affect Gray Wolf.....no effect Black-footed Ferret.....no effect
Pollutant/Effect of Action	sediment	Arctic Grayling.....no effect Bull Trout.....no effect Bald Eagle.....not likely to adversely affect Grizzly Bear.....not likely to adversely affect Gray Wolf.....no effect Black-footed Ferret.....no effect
Pollutant/Effect of Action	thermal modification	Arctic Grayling.....no effect Bull Trout.....no effect Bald Eagle.....not likely to adversely affect Grizzly Bear.....not likely to adversely affect Gray Wolf.....no effect Black-footed Ferret.....no effect
Pollutant/Effect of Action	nutrients	Arctic Grayling.....no effect Bull Trout.....no effect Bald Eagle.....not likely to adversely affect Grizzly Bear.....not likely to adversely affect Gray Wolf.....no effect Black-footed Ferret.....no effect

Office of Ecosystems Protection and Remediation
US Environmental Protection Agency
Region VIII
Denver, Colorado

February 18, 2005

Introduction

Section 7(a) of the Endangered Species Act ("ESA"), 16 U.S.C. Section 1536(a), requires that each federal agency

> · in consultation with the U.S. Fish and Wildlife Service ("FWS"),[1] insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any listed species or to result in the destruction or adverse modification of any designated critical habitat of each such species (§7(a)(2)); and
> · confer with the FWS on any agency action that is likely to jeopardize the continued existence of any species that is proposed for listing or to result in the destruction or adverse modification of any critical habitat proposed to be designated for any such species (§7(a)(4), emphasis added).

A biological evaluation may provide an analysis of the potential effects of a proposed federal agency action on any listed, proposed, and candidate species or the designated critical habitat of any such species, based on the best scientific or commercial information available.

The federal action that is the subject of this biological evaluation is the Environmental Protection Agency's (EPA's) proposed approval of the total maximum daily load ("TMDL") described below, which the state of Montana has submitted to EPA. According to section 303(d) of the Clean Water Act ("CWA"), states are required to develop TMDLs for pollutants discharged into waters for which certain technology-based controls on point source dischargers as required by the CWA are not expected to be adequate to ensure implementation of applicable water quality standards. EPA is required to review TMDLs that states submit to it for approval. EPA must either approve or disapprove each TMDL and, in the event of a disapproval, establish a TMDL itself.

TMDLs do not, in themselves, authorize any discharge of pollutants or create new regulatory authority to control pollutants. Rather, TMDLs rely on existing mechanisms to be implemented. These mechanisms include regulatory programs such as the CWA National Pollutant Discharge Elimination System ("NPDES") permit program and voluntary actions, including management measures or other controls by federal, state, local governments, Indian tribes, or individuals. Once EPA approves a TMDL that includes a point source wasteload allocation component, effluent limits in subsequent NPDES permits for the relevant waterbody must be consistent with the assumptions and requirements of that wasteload allocation. (See 40 C.F.R. Section 122.44(d)(1)(vii)(B).) Once EPA approves a TMDL that includes a load allocation component addressing nonpoint sources, there is wide discretion regarding how or

[1] For certain actions not relevant here, federal agencies consult with the National Marine Fisheries Service instead.

whether that load allocation may be implemented. Past experience has been that when nonpoint source components of a TMDL are implemented, it is through a voluntary, incentive-based program at the federal, state, tribal, or local level.

This biological evaluation has been prepared to assist the EPA and FWS in carrying out their activities pursuant to ESA Sections 7(a)(2) and 7(a)(4) as they pertain to EPA's approval of the TMDL(s) described below.

Proposed Action

EPA proposes to approve a TMDLs established by the state of Montana for the control of certain pollutants (salinity, selenium, sediments, thermal modification, and nutrients) in the Sun River watershed including the Sun River, Muddy and Ford Creeks, and Freezeout Lake. These limitations will be established and enforced by the state of Montana Department of Environmental Quality.

Salinity

Total Dissolved Solids (TDS) targets include 2,264 mg/l in Freezeout Lake for the outlet of the Lake so that it can meet the 5,000 mg/l TDS beneficial use target in Priest Butte Lake. The irrigation season target (May 1 to September 30) is set at 660 mg/l for Muddy Creek. For non-irrigation season, a target of 960 mg/l was used. An additional margin of safety target will be a value less than 4.5 for sodium adsorption ratio (SAR) during the irrigation season. Salinity targets in the Freezeout Wildlife Management Area are based upon controlling the impacts of salinity on waterfowl rearing in Priest Butte Lake as well as agricultural support (i.e., livestock watering). Variability in TDS concentration, and therefore load, is expected because of the natural buildup of saline conditions during dry weather periods. Seasonal variation is taken into account by considering how TDS concentrations vary in relation to flow conditions. TDS concentrations tend to increase as flow decreases or during the falling limb of the hydrograph. The lowest flows tend to occur in late summer and fall. When flow is less than one cfs, groundwater with a higher TDS concentration composes the major portion of total flow.

Most species of fish and other aquatic life can tolerate a range of dissolved solids concentrations in order to survive under natural conditions. A study conducted in southeast Montana (Klarich and Regele, 1980) indicates that as salinity levels increase, sensitive species are eliminated while more salinity-tolerant species increase in abundance. Thus, while the overall abundance of macroinvertebrates may not change, the diversity, taxa richness, of the aquatic biota does change. Another study (Mount et al., 1997) suggests that chronic toxicity to fresh water crustaceans and minnows can begin to occur with in the range of 1,200 to 1,800 µS/cm. On the basis of the literature survey (McKee & Wolf, 1963) the limit for TDS which should not interfere with the freshwater fish and aquatic life beneficial use is 2,000 mg/l.

Tolerance of ducklings to salt water is age dependent and ducklings are more sensitive at your life stages (Barnes and Nudds, 1991). A recent study found that when mallard ducklings were exposed to water with approximately the same specific conductance as found in Priest Butte Lakes (i.e., 7,200-9,650 µS/cm) for 14 days, growth rates were reduced. In addition, Swanson et al. (1984) found that drinking water in the range of 11,000 mg/l TDS was fatal to young mallard ducklings. Ducklings on saline lakes are associated with fresh water areas and may use avoidance of saline conditions for survival (Swanson et al., 1984).

Indirect effects of excess dissolved solids are primarily the elimination of desirable food plants and other habitat-forming plants. Rapid salinity changes cause plasmolysis of tender leaves and stems because of changes in osmotic pressure. TDS levels of greater than 2000 mg/l can severely affect crop water availability (Ayers & Westcot, 1985). Literature reviews conducted by Colorado State University and Utah State University found that salinity tolerance for ornamental plants/ flowers ranged from 1,300 mg/l to 5,250 mg/L TDS for highly tolerant species.

Selenium

Freezeout Lake and Muddy Creek are the only waterbodies in the Sun River watershed listed with a water quality impairment as a result of selenium. In-lake dissolved concentrations have been measured as high as 180 µg/l as have intermittent or ephemeral tributaries and coulees in the Muddy Creek watershed. The highest total selenium concentration detected in Muddy Creek at the Vaughn site was 13.8 µg/l. The Freezeout Lake and Muddy Creek selenium target is set at Montana's aquatic life chronic water quality standard for selenium, or 5 µg/l. A 4 µg/g target for surficial bottom sediments also is set to curb food-chain bioaccumulation. These targets are set to ensure that the aquatic life and fisheries beneficial uses are consistently supported.

Selenium occurs naturally in the environment with soil concentrations rarely exceeding 2 µg/g (ppm) dry weight, except in soils produced by weathering of sedimentary rock. Once selenium is dissolved in surface water or groundwater and delivered to a wetland or lake ecosystem, selenium can bioaccumulate in the food chain. This bioaccumulation, in the past, has resulted in the deaths of many fish and aquatic birds and has led to reproductive failure and deformed offspring. Field and laboratory data suggest that selenium at concentrations greater than 2 to 5 µg/l (ppb) in water can be bioconcentrated in the food chains and cause toxicity and reproductive failure in fish. Dietary selenium that is only 2-3 times higher than normal may be sufficient to cause developmental problems and death in bird and fish embryos.

Sediments

Sediment target conditions are sought for the portions of the Sun River watershed including the upper and lower Sun River, Ford and Muddy Creeks to achieve proper functioning condition (PFC) for 85% of stream length with no non-functioning riparian areas except for Muddy Creek. In other words, for any given stream system, at least 85% of the linear distance should have the appropriate channel pattern, form, and function thus reducing the amount of sediments into the watershed. The 85% minimal target also allows for unstable eroding cut-banks and/or riparian vegetation in a younger seral stage as a result of natural perturbations in the watershed (e.g., floods) as well as human activities. The Ford Creek target would include allowing beaver activity. The Muddy Creek target would be to achieve PFC for 85% of the stream length alone Muddy Creek and its major tributaries with less than 5% non-functioning riparian areas. This would result in a 15% reduction of current 1996-2001 SSC loading at Vaughn in Muddy Creek, 15% reduction from Muddy Creek to the lower Sun River, and an increase in macroinvertebrate taxa for Ford Creek. Supplemental targets associated with the sediment TMDLs include percentage decrease in the length of eroding banks, certain entrenchment ratios for the streams, macroinvertebrate metrics, and suspended sediment concentrations. A phased approach to the TMDL would be applied to the upper Sun River.

Excessive sediment of a channel bed can have a negative effect on aquatic life in several ways including problems with spawning, migration, food supply, juvenile rearing, and fry emergence. Elevated levels of fine sediment can fill pools and other depositional habitats, which reduces living space for fish including hiding, security, and winter cover. They can reduce fish egg survival in gravels by smothering the eggs resulting in the lack of oxygen, or by entrapment of pre-emergent alevins (young fish with egg sacs) in the substrate. Fine sediment can also affect the composition and production of the aquatic insect community, which are important food sources for many species of fish. Siltation reduces inter-gravel oxygen levels, pool volume, and thus the holding capacity, which can lead to increased stress on species of fish as a result of overcrowding, heat-related stress, and increased competition. Suspended sediment can clog fish gills, limit the ability of fish to find food, and reduce available sunlight to submerged vegetation.

Thermal Modification

Water quality impairments have been determined for the Sun River and Muddy Creek as a result of thermal modification or increased stream temperatures. A momentary maximum temperature of 77°F represents a protective value aimed at preventing exposure of rainbow and brown trout to lethal temperatures. The lowest temperature where rainbow trout lethality occurred in EPA studies was 75°F (USEPA, 1976). Instantaneous data exceedances above the "maximum" target can be considered for TMDL attainment. The maximum weekly average temperature for growth is 66°F for rainbow trout (USEPA, 1976). The maximum weekly moving average temperature is defined as the moving average of continuous temperature data for a seven-day period. Thus, the temperature targets for the Sun River and Muddy Creek include

the in-stream maximum temperature of 77°F and the in-stream weekly average temperature of 66°F.

Temperature is an important physical parameter, which to some extent regulates many of the beneficial uses of water. The life associated with the aquatic environment in any location has its species composition and activity regulated by water temperature. Temperature changes in waterbodies can alter the existing aquatic communities. In open waters elevated temperatures may affect periphyton, benthic invertebrates, and fish, in addition to causing shifts in algal dominance. Upper and lower limits for temperature have been established for many aquatic species (USEPA, 1986). Tabulations of lethal temperatures for fish and other organisms are available (NAS, 1972). The aquatic species, thermal accumulation state and exposure time are considered the critical factors (Parker and Krenkel, 1969).

Nutrients

Water quality impairments as a result of excessive nutrient concentration or nutrient enrichment have been determined for Ford and Muddy Creeks, the Sun River, and Freezeout Lake.

Even though restoration activities for salinity and selenium are likely to reduce nutrient loading to Freezeout Lake, no TMDL or targets are outlined for Freezeout Lake nutrients. Interim targets for Muddy Creek are based on a simple 50% reduction of nutrients and are set at 130 µg/l for total phosphorus and 1,650 µg/l for total nitrogen during the summer months. Nutrient targets that would be considered for Muddy Creek at this time if it were reclassified would be the same as the lower Sun River at 50 µg/l total phosphorus and 650 µg/l total nitrogen. The reclassification targets should be thought of as a long-term goal because targets and the TMDLs for the lower Sun River will not likely be met until these long-term nutrient targets for Muddy Creek are achieve. Besides the total phosphorus and total nitrogen targets mentioned above for the lower Sun River chlorophyll *a* targets are 100 mg/m² mean and 150 mg/m² maximum.

Nutrients, in the appropriate amounts, are essential to the health and continued functioning of aquatic ecosystems. Excessive nutrient loadings will, however, result in excessive growth of macrophytes or phytoplankton and potentially harmful algal blooms, leading to oxygen declines, imbalance of prey and predator species, public health concerns, and a general decline of the aquatic resource. Reports of livestock, waterfowl, and occasionally human poisonings after drinking from waterbodies with blue-green algal blooms are not uncommon (Darley 1982; Carmichael 1986, 1994).

When nutrient inputs exceed the assimilative capacity of a waterbody system, the system progresses toward hypereutrophic conditions. Symptoms include an overabundance of primary producers, decreased biological diversity, algal blooms, low dissolved oxygen, episodic anoxia, loss of vascular plant life, and fish kills. Algal blooms of certain cyanobacterial species produce

toxins that can affect animal and human health. Nutrient enrichment can decrease water clarity (increased turbidity) can cause loss of macrophytes and creation of dense algal mats. Loss of macrophytes and increased algal biomass may also reduce habitat availability for aquatic organisms. Thus, nutrient enrichment may alter the native compositions and species diversity of aquatic communities (Nordin 1985; Welch 1992; Smith 1998; Carpenter et al. 1998; Smith et al. 1999). Investigations have shown that the key causative factors are excessive concentrations of the primary nutrients phosphorus and nitrogen.

The purpose of establishing TMDLs is to improve water quality and, in some cases, to help maintain the high quality that may already exist in the receiving waters. Further, there are TMDLs that may be updated in response to one of several reasons, including new flow information, new standards, new monitoring information, and new modeling techniques. For these proposed federal actions, it should be noted that the salinity, selenium, sediment, thermal modification, and nutrient standards are most likely being achieved in the receiving waterbody. Hence, the principal impacts of EPA's approval of these TMDLs will be to help maintain ambient water quality and to update the TMDLs for this part of the receiving waterbody.

Geographic Scope of Action

The Sun River and its tributaries including Ford and Muddy Creeks and Freezeout Lake are located in Cascade, Lewis and Clark, and Teton Counties in the Sun River basin in west central Montana. The Sun River flows into directly into the Missouri River at Great Falls, Montana. The Sun River watershed encompasses approximately 2,200 square miles. The Sun River itself is approximately 97.4 miles in length, while Ford Creek, which is a tributary of Smith Creek, is approximately 17 miles in length, and Muddy Creek in 40 miles in length. Freezeout Lake, which originally was a closed basin, consists of shallow ponds.

The major land uses in the Sun River watershed include livestock grazing, crop production, forest lands, urban and rural residential, and wildlife habitat. Of the estimated 1.4 million acres, the watershed contains approximately 100,000 acres of irrigated lands, 300,000 acres of dry cropland, 400,000 acres of rangeland, and 100,000 acres of pastures, all of which contribute to the impairment of water quality (Sun River Plan of Work, 1996). Thus, land use cover is approximately 35% cropland, 28% rangeland, 35% forested, and 2% urban. Croplands consist of approximately 40% irrigated lands and 60% dry lands.

The TMDLs for the Sun River and tributaries are designed to foster the maintenance of water quality standards in the River and its tributaries . The in-river, creek, and lake concentrations of salinity, selenium, sediment, thermal modification, and nutrients are expected to be below those required by state water quality standards.

Species Evaluation

The only species that may be affected by the Sun River and tributaries TMDLs are aquatic or aquatic-dependent species because the TMDLs have an indirect effect only on the

water quality of the waterbody receiving salinity, selenium, sediment, thermal modification, and nutrients. Further, there are no other indirect effects, direct effects, interrelated, or interdependent effects associated with the proposed action.[2]

Aquatic or aquatic-dependent species that may occur in Cascade, Lewis and Clark, and Teton Counties include the **Arctic grayling** (candidate), **bull trout** (threatened), **bald eagle** (threatened), and the **grizzly bear** (threatened). Other species, which may occur in these counties include the **gray wolf** (endangered), and the **black-footed ferret** (endangered). There are no known candidate or proposed species occurring in these three counties.

(*The ESA does not require evaluation or consultation of effects on candidate species. An evaluation is nevertheless provided below for informational purposes and to prompt evaluation of changes or alternatives to the proposed action if it is found to have an adverse effect on the candidate species*.)

■■■

Evaluation of Action on the Arctic Grayling (*Thymallus arcticus)*
Status: Candidate

Range: Drainage of upper Missouri River in Montana and extreme northwestern Wyoming. The only confirmed, self-sustaining remnant of the indigenous upper Missouri River fluvial Arctic grayling population exists in the Big Hole River and the lower reaches of its tributaries in Beaverhead, Deer Lodge, Gallatin, Lewis and Clark, Madison, Silver Bow, and Teton Counties in Montana. An additional remnant of the fluvial Arctic grayling population of the upper Missouri River drainage may occur in and around Ennis Reservoir on the Madison River in Madison County, Montana.

Habitat: Requires cold, clear, unpolluted waters of large rivers, rocky creeks, and oligotropic lakes. They are seldom found in deep water and prefer water temperatures between 42 degrees to 50 degrees F. Arctic grayling feed primarily on insects and salmon eggs and also eat molluscs, crustaceans, and small fish.

[2] EPA's approval of a TMDL and associated wasteload allocations and load allocations does not add anything to the environmental baseline. No physical addition or alteration of any kind results to the environment from this action. Thus, EPA's approval of the state's numerical calculations has no direct effect on T&E species. It is only when the numerical load calculations are implemented that additions or alterations to the environmental baseline, or effects, are expected to occur. TMDLs generally have an indirect affect on the environmental baseline in that effluent limits in NPDES permits must be consistent with any wasteload allocation found in an EPA-approved TMDL. 40 C.F.R. §122.44(d)(1)(vii)(B). In other words, the wasteload allocation provides a limit to the amount of a given pollutant discharge that will be allowed in an NPDES permit. Because approval of a TMDL with wasteload allocations provides the basis for limiting pollutant discharge through NPDES permits, such approval will generally have beneficial effects (to the extent there are any effects) to species inhabiting the receiving water.

Evaluation:

Effect of salinity, selenium, sediment, thermal modification, and nutrient TMDLs on Arctic grayling: While the Arctic grayling may occur in Lewis and Clark and Teton Counties, the only confirmed, self-sustaining remnant of this population exists in the Big Hole River and the lower reaches of its tributaries in Beaverhead, Deer Lodge, and Silver Bow Counties in Montana. An additional population may occur in and around Ennis Reservoir on the Madison River in Madison County, Montana. Therefore, no effect is anticipated from these federal actions because of the lack of proximity of the species to the area of these TMDLs in the Sun River and tributaries.

EPA Finding: EPA concludes that there is **no effect** of its approval of these Sun River and tributaries TMDLs on the Arctic grayling.

Evaluation of Action on the Bull Trout (*Salvelinus confluentus*)
Status: Threatened

Range: The historic range included the Pacific northwest sector of the United States as well as the northwest territories in Canada and possibly Alaska. The current range includes ID, MT, NV, OR, and WA. In Montana, it occurs in the Columbia and Saskatchewan River. While the bull trout may occur in or near Lewis & Clark County, it does not occur in the Missouri River drainage.

Habitat: Bull trout are found primarily in upper tributary streams and several lake and reservoir systems; they have been eliminated from the main stems of most large rivers. It is a highly predacious fish feeding heavily on aquatic insects when small, and primarily on other fish as an adult.

Relatively cold waters are characteristic of bull trout habitat. Water temperatures above 59° F are believed to limit their distribution (Fraley and Shepard 1989; Rieman and McIntyre 1996). Although adults have been observed in large rivers throughout the Columbia River basin in water temperatures up to 68° F, Gamett (1999) documented steady and substantial declines in abundance in stream reaches where water temperatures ranged from 59 to 68° F. Fraley and Shepard (1989) reported that initiation of spawning by bull trout in the Flathead River system appeared to be related to water temperature, with spawning initiated when water temperatures dropped below 48 to 50° F.

Critical habitat for bull trout was designated on October 6, 2004 for numerous populations of the bull trout. The U.S. Fish and Wildlife Service excluded all waterbodies in Montana from critical habitat designations because of section 4(b)(2) of the Endangered Species Act. Because the bull trout does not occur in the Missouri River basin, no habitat occurs in the basin.

Evaluation:

Effect of salinity, selenium, thermal modification, and nutrient TMDLs on the bull trout: The bull trout does not occur in the Sun River watershed or any other waterbody in the Missouri River drainage. Therefore, bull trout do not occur in proximity of the proposed action.

EPA Finding: EPA concludes that its approval of the salinity, selenium, thermal modification, or nutrient TMDLs for the Sun River, Ford and Muddy Creeks, and Freezeout Lake will have **no effect** on the bull trout.

Evaluation of Action on the Bald Eagle (*Haliaeetus leucocephalus*)
Status: Threatened; Proposed for Delisting

Range: Entire lower 48 states

Habitat: Quiet coastal areas, rivers or lakeshores with large, tall trees.

Evaluation:

Effect of salinity, selenium, sediment, thermal modification, and nutrient TMDLs on bald eagle: Fish are the primary food source for the bald eagle, but they also take a variety of birds, mammals, and turtles when fish are not readily available. High salinity, selenium, sediment, thermal modification (increased water temperatures), and nutrients can be toxic to aquatic life. Certain concentrations can cause lethal or sub-lethal effects on a wide range of aquatic life, including aquatic life, which serve as a food source for the bald eagle. Since the TMDLs are designed to reduce levels of salinity, selenium, sediment, water temperature, and nutrients that may be harmful to aquatic life, the food base for the bald eagle should be protected.

EPA Finding: EPA concludes that its approval of the salinity, selenium, sediment, thermal modification, and nutrient TMDLs for the Sun River and tributaries will **not likely adversely affect** the bald eagle because any effects of the proposed action will be beneficial to the species.

Evaluation of Action on Grizzly Bear (*Ursus arctos horribilis)*
Status: Threatened

Range: The historic range of the grizzly bear covered much of North America from the mid-plains westward to California and from central Mexico north throughout Alaska and Canada. The current range includes CO, ID, MT, WA, and WY.

Habitat: The grizzly bears habitat includes diverse forests interspersed with moist meadows and grasslands in or near mountains. The bear is an omnivore with a diet that includes insects, wild honey, grasses, sedges, roots, mountain sorrel, buffalo berries, fish,

moose, elk, deer, and bighorn sheep. Thus, aquatic species such as fish are a small but sometimes import part of the bear's food source.

Evaluation:

Effect of salinity, selenium, sediment, thermal modification, and nutrient TMDLs on grizzly bear: As mentioned above, fish (e.g., cutthroat trout) are one of the many food species that the grizzly bear feeds upon. Approval of the proposed TMDLs would not result in the loss or degradation of the grizzly bear's habitat. In addition, any reduction in salinity, selenium, sediments, water temperatures, and nutrients should result in the improvement of habitat for aquatic life, including species upon which the grizzly bear feeds.

> EPA Finding: EPA concludes that its approval of the salinity, selenium, sediment, thermal modification, and nutrient TMDLs for the Sun River and tributaries will **not likely adversely affect** the grizzly bear because any effects the proposed action will have on the species will be insignificant.

Evaluation of Action on the Gray Wolf (*Canis lupus*)
Status: Endangered

Range: The current range includes CO, ID, MI, MT, ND, SD, WA, WI and WY.

Habitat: Forested areas.

Evaluation:

Effect of salinity, selenium, sediment, thermal modification, and nutrient TMDLs of the gray wolf: The effect of the federal action will be limited to aquatic or aquatic-dependent species.

> EPA Finding: EPA concludes that there is **no effect** of its approval of the Sun River and tributaries salinity, selenium, sediment, thermal modification, and nutrient TMDLs on the gray wolf.

Evaluation of Action on Black-footed Ferret (*Mustela nigripes*)
Status: Endangered; Experimental Population, Non-essential

Range: The historical range of the species includes 12 states and 2 Canadian provinces. There is prehistoric evidence of this ferret occurring from the Yukon Territory in Canada to New Mexico and Texas. The current ferret range is AZ, CO, KS, MT, ND, NE, NM, SD, UT, and WY and is coincident with that of prairie dogs.

Habitat: The habitat for the ferret is short and mixed grass prairie in areas where there are prairie dogs. Black-footed ferrets almost exclusively depend upon prairie dogs for food and use prairie dog burrows for shelter and denning.

Evaluation:

Effect of salinity, selenium, sediment, thermal modification, and nutrient TMDLs on the black-footed ferret: These proposed federal actions do not result in habitat loss or degradation of the ferret. Further, any effects of the federal actions will be primarily limited to aquatic or aquatic-dependent species.

EPA Finding: EPA concludes that there is **no effect** of its approval of the Sun River and tributaries salinity, selenium, sediment, thermal modification, and nutrient TMDLs on the black-footed ferret.

■■■

Conclusions

EPA concludes that its approval of the salinity, selenium, sediment, thermal modification, and nutrient TMDLs for the Sun River, Ford Creek, Muddy Creek, and Freezeout Lake will not likely adversely affect the bald eagle or the grizzly bear. Further, EPA concludes that its approval will have no effect on the Arctic grayling, bull trout, gray wolf, or the black-footed ferret.

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Attachment:

TMDL Review Criteria
US EPA; Region VIII

Review Criteria (All criteria must be met for approval.)
■ **TMDLs result in maintaining and attaining water quality standards** *(including the numeric, narrative, use classification, and antidegradation components of the standards; the "phased" TMDL can be used where there is a level of uncertainty; in addition, TMDLs can rely on either regulatory or voluntary approaches to attain standards);*
■ **TMDLs have a quantified target or endpoint** *(a numeric water quality standard often serves as the target, but any indicator or set of indicators which represent the desired condition would suffice);*
■ **TMDLs include a quantified pollutant target, but this target can be expressed in any appropriate manner** *(According to EPA reg (see 40 CFR 130.2(i)) TMDLs need not be expressed in pounds per day or concentration when alternative means of expression are better suited to the waterbody problem; TMDLs can be expressed as mass per unit of time, toxicity, % reduction in sediment or nutrients, or other measure);*
■ **TMDLs must consider all significant sources of the stressor of concern** *(all sources or causes of the stressor must be identified or accounted for in some manner; this accounting can lump several sources of unknown origin together;*
■ **TMDLs are supported by an appropriate level of technical analysis** *(allocations for nonpoint sources are often best professional estimates whereas waste load allocations for point sources are often based on a more detailed analysis);*
■ **TMDLs must contain a margin of safety and consider seasonality** *(a margin of safety can be either explicit or implicit in the analysis or assessment);*
■ **TMDLs apportion pollutant loads among sources** *(allocations may be expressed in a variety of ways such as by individual discharger, by tributary watershed, by source or land use category, by land parcel, or other appropriate scale or dividing responsibility);*
■ **TMDLs shall be subject to public review** *(public participation should be in accordance with the State's continuing planning process ("CPP").)*