QUICK REFERENCE
TO BASIC SECTIONS FOR A
BIOLOGICAL ASSESSMENT FOR BULL TROUT

A . Project Area and Project Description

The BA should provide detailed information about project activities pertinent to those that could impact bull trout and its habitat. This section should address **what**, **where, when**, **who** and **how** of the proposed action. Project designs should be final or near-final and the BA should provide detailed information about project location and project activities pertinent to those that could impact bull trout and its habitat.

B. Baseline Conditions of the Project Area

This section should provide a thorough description of the existing habitat conditions for bull trout (pre-project conditions). To the extent possible, the BA should be based on current site-specific information, including habitat conditions and populations. If possible, use photos to help show the existing habitat conditions of the project area.

C. Analysis of Effects

This section should clearly reflect how the baseline habitat and baseline population conditions would change when the project is constructed and implemented.

The BA should provide a thorough analysis of potential direct, indirect, and cumulative effects of the action on bull trout and its habitat, including any related and dependent effects associated with the primary action. The level of detail and supporting evidence and rationale is a critical step in the BA. Although the effect determination may be correct, the USFWS cannot concur without supporting information. The assessment should be well justified, leading the USFWS through a discussion of effects to a logical, well-supported "single" conclusion of the effect from the proposed action. The BA must contain a distinct statement of only **one** effect of the project on bull trout and only **one** effect on critical habitat, that is – *no effect*; *may affect, not likely to adversely affect*; or *may affect, likely to adversely affect.*

D. Conclusion and Determination

This section is where you put your overall effect determination after you have analyzed direct, indirect, and cumulative effects. In the conclusion section, at minimum the USFWS looks for one of the following statements:

No effect
May affect, not likely to adversely affect, ***or***
May affect, likely to adversely affect.

E. Literature Cited

Include all cited literature in the BA in this section, personal communications with local biologists, and other supporting technical materials.

A GUIDE TO BIOLOGICAL ASSESSMENTS FOR BULL TROUT

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Section 7 of the Endangered Species Act (ESA) requires all federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) if they determine that any action they fund, authorize or carry out may affect bull trout *(Salvelinus confluentus*) or its designated critical habitat. For proposed actions that may have an affect on a listed species or its critical habitat, like bull trout, a project proponent typically prepares a biological assessment (BA). The purpose of the BA is to determine if a proposed action (or project) will have an effect on bull trout and critical habitat and if informal or formal consultation is required.

The BA provides the analysis of project impacts to bull trout and its habitat that is likely to be found in the project area. Based on this analysis, the BA concludes with an "effect determination" for the proposed action. If the project has "no effect" on bull trout /critical habitat there is no requirement to consult; however, this should be documented in your project files to document agency compliance with the ESA. If the project "may affect, but is not likely to adversely affect" (NLAA) bull trout/critical habitat, consultation is required and you must seek concurrence with the USFWS through informal consultation. If the project "may affect, and is likely to adversely affect" (LAA) bull trout/critical habitat, you must initiate formal consultation with USFWS. Formal consultation involves the submittal of a BA to USFWS and the receipt of a Biological Opinion from USFWS. The Biological Opinion provides authorization for the incidental take of bull trout.

The following guidance indicates what the USFWS anticipates at a minimum for a BA specifically for bull trout. The guidance is intended to assist parties that may need to prepare a BA. In preparing a BA on bull trout, it is important to identify what is known as well as what isn't. If site specific information about the affected population and/or affected habitat is unknown, assume the worst case scenario and state that. Don't assume that the reviewer knows what the site looks like, or leave statements up to interpretation. Prepare a BA as if a third party were reviewing the document and had to rely only on the information presented.

The USFWS acknowledges the contents of a BA are at the discretion of the action agency and will depend on the nature of the Federal action. CFR part 402.12 lists considerations of the contents of a BA as: 1) results of on-site inspections; 2) views of recognized experts; 3) review of literature and other information; 4) analysis of the effects of the action on the species and habitat, and 5) analysis of alternative actions to the proposed action. The USFWS's guidance is in accordance with these considerations and should provide a useful means to arrive at an effects determination for bull trout that is thorough and based on sound technical information and reasoning.

CONTENT OF A BIOLOGICAL ASSESSMENT FOR BULL TROUT

A . Project Area and Project Description

This section is often lacking sufficient detail, but is one of the most important sections of a BA and should be emphasized. The USFWS cannot consult on "unknowns, maybes, or good intentions." Project designs should be final or near-final for us to consult. The BA should provide detailed information about project activities pertinent to those that could impact bull trout and its habitat. This section should address **what**, **where, when**, **who** and **how** of the proposed action.

Describe (1) **WHAT** the proposed project or action is; (2) **WHERE** the project is (refer to attached maps); (3) describe **WHEN** the action is going to take place, time line/implementation schedules; (4) specify **WHO** is going to do the action and under what authority; and (5) include those measures that relate to **HOW** the action will be accomplished (e.g., rubber-tired bucket-loader, skyline, ground-based skidders, etc.).

Here are some examples of things to describe:

- *Type of project (consider all actions and treatments including those related to or dependent on the proposed project;*
- *Project location and project footprint (include all project features)considering all activities that may have an indirect or direct affect on the habitat and not just merely the immediate area involved in the project;*
- *Project schedule and duration: expected start and completion date and construction/ implementation phases and/or timetable;*
- *Construction access and staging areas, and construction equipment and techniques;*
- *Permanent and temporary actions and structures, and if temporary, how long;*
- *Surrounding land-use – commercial forest, agriculture, residential, etc.;*
- *Hydrology and drainage patterns of the affected lake or stream;*
- *Describe the desired condition of the project upon completion*

1. Provide the location of the proposed project including county, township, range and section. Provide maps for the project and vicinity with the exact location on a map identifying all project features of the affected lake or stream and at the smallest meaningful scale possible (e.g., reach scale of the affected stream). Include on the map all off-site use areas (i.e. materials sources, borrow sites, mitigation sites, stockpiling areas, staging) and locations of project features such as temporary roads.

2. Include a detailed description of all proposed project-related actions. Be as specific as possible. If information is unknown, indicate as such and whether it would be forthcoming. Primary and secondary project features need to be specified. For example, for a primary project such as a timber harvest, secondary project features may include new roads, landings, culvert upgrades on existing roads, decommissioned roads, etc. State the type of activity, objective of the activity, timing of the work for each action, and how long the activity will last.

3. Include all minimization measures in the project description and include those actions such as avoidance measures, seasonal timing restrictions, BMPs, and restoration/creation (on-site or off-site). Keep in mind that it's preferable to include minimization measures as part of the project

description rather than wait for the USFWS to require them as terms and conditions, as your agency's proposed minimization measures are considered when making the jeopardy determination. These measures can include:

- *Areas that will be avoided by the project;*
- *Erosion and sedimentation controls (silt fences, catch basins, slash filter windrows);*
- *Construction work that can be done outside the active channel (in the dry);*
- *Seasonal timing restrictions for instream work;*
- *Reduced road densities (decommissioning) and road closures;*
- *Replacing culvert barriers with bridges or culverts designed for channel simulation;*
- *Streambank stabilization incorporating bio-engineering techniques and fish habitat features;*
- *Riparian vegetation reclamation and buffers for floodplain protection;*
- *Forestry and construction BMPs*

B. Baseline Conditions of the Project Area

This section should provide a thorough description of the existing habitat conditions for bull trout (pre-project conditions). To the extent possible, the BA should be based on current site-specific information, including habitat conditions and populations. If possible, use photos to help show the existing habitat conditions of the project area. Also, we strongly encourage the use of the "core area" concept characterized in the USFWS's bull trout draft recovery plan (USFWS 2002) to describe the affected population units. For formal consultation, the USFWS will conduct a jeopardy analysis based on the hierarchy of the affected local population and core area population units.

1. The description of the baseline should address all pertinent and relevant habitat parameters for bull trout. The USFWS's preferred approach to describe existing habitat conditions is detailed in the USFWS's document titled" A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation Watershed Scale" (USFWS 1998). We encourage the use of this analytical tool because it lists the habitat and population parameters for bull trout that are functionally important for bull trout survival. The BA should also include information about past and present activities in the area that relate to bull trout or its habitat, and/or the proposed action.

2. Describe bull trout habitat requirements in general and relate that to the general health or status of the affected bull trout local population(s) and associated core area population. Identify and describe the factors that are known or suspected to be limiting the affected bull trout population(s). Describe the habitat conditions in the project area and how the local populations use it, either permanently or seasonally. Describe the local status of the bull trout population (e.g., consider redd count and juvenile abundance data). Utilize relevant scientific and technical information, input from local biologists (Montana FWP, Forest Service), information from site visits, and information from surveys or previous biological assessments if appropriate.

C. Analysis of Effects

This section should clearly reflect how the baseline habitat and baseline population conditions would change when the project is constructed and implemented. Utilizing the "Framework" document can facilitate the analysis of the affect of the proposed action on the current habitat

conditions for bull trout and affected bull trout population(s). This document contains a matrix of key bull trout habitat parameters and a checklist to describe the effects of the action on each habitat indicator, as well as key population parameters. The "Framework" document can be used for nearly all project types; however, it is not mandatory.

The BA should provide a thorough analysis of potential direct, indirect, and cumulative effects of the action on bull trout and its habitat, including any related and dependent effects associated with the primary action. The level of detail and supporting evidence and rationale is a critical step in the BA ensuring the USFWS has sufficient information to concur with the effect determination. Although the effect determination may be correct, the USFWS cannot concur without supporting information. The assessment should be well justified, leading the USFWS through a discussion of effects to a logical, well-supported "single" conclusion of the effect from the proposed action. The BA must contain a distinct statement of only **one** effect of the project on bull trout and only **one** effect on critical habitat, that is – *no effect*; *may affect, not likely to adversely affect*; or *may affect, likely to adversely affect.*

1. Describe and analyze the effects of the action that would directly and/or indirectly, either short-term or long-term, affect bull trout or its habitat. Consider all life stages that could be affected from eggs (in the gravel), fry, juveniles, subadults, and adults as well as the affect on the different life forms if present - resident, fluvial, and adfluvial. Include all actions that would remove, alter, or destroy habitat, temporarily or permanently, and/or that could result in direct mortality. Consider that construction work that occurs within the active stream channel occupied by bull trout could alter existing habitat conditions and current use by bull trout at least temporarily. Some minimization measures, such as installing a coffer dam and electro-fishing to remove fish prior to construction, still involve adverse effects, even though less of an effect than if they were not implemented. Also, consider the proximity and location of spawning areas, rearing areas, and migratory habitat in relation to the action. Quantify effects to the extent possible.

2. Describe and analyze the effects of the action that are reasonably certain to occur later in time, after the project is completed (i.e., indirect effects). Determine when these effects would begin and how long they would persist. For example, if implementation of the project would result in loss of instream flow beginning next irrigation season, determine the habitat loss due to the decreased flows and the duration of the effect.

3. Effect determinations must be consistent with types of actions in the project description, the biology of the bull trout and the habitat status and existing environment. The following are some examples of effects:

Loss or modification of instream habitat--direct and indirect;
Direct mortality of all or some of the life stages of bull trout;
Harassment causing displacement;
Loss or change in the prey base;
Partial or complete barrier to movement and fragmentation of habitat;
Increased predation due to habitat changes;
Impacted water quality/quantity (increased runoff, sedimentation, altered hydrology);
Entrainment and/or stranding due to dewatering an active channel;
Loss or encroachment of floodplain function and/or channel migration zone;

Alteration of the streambank/shoreline and associated riparian vegetation

4. Describe the level to which bull trout critical habitat will be affected by the project. The key to understanding effects to bull trout critical habitat is to analyze how the action would affect the nine primary constituent elements (PCEs). Include a description of how each of the PCEs could be affected by the project. The PCEs for bull trout critical habitat will have already been addressed during the species analysis if the Framework analytical approach was used addressing the 19 habitat indicators. In this case, do not repeat the habitat analysis. Instead use the USFWS's Crosswalk approach (USFWS 2010) to show that each PCE had been analyzed previously, and document the effect of the PCE that corresponds to the Framework's habitat parameter(s).

5. Describe and analyze, to the extent practicable, the effects of the action(s) that are cumulative to the primary action. Cumulative effects are those effects of unrelated future state, tribal or private activities (not Federal) that are reasonably certain to occur within the project area. If it is known that a state or private project is permitted, or licensed, but not yet implemented, this should be assessed as a cumulative effect if it would affect the same local population. An example might be that a state agency has been permitted to replace several culverts in the next two years on a stream that is immediately upstream of the project area. The state action should be analyzed as a cumulative effect. Cumulative effects under ESA are ***not*** the same as the definition under NEPA.

D. Conclusion and Determination

This section is where you put your overall effect determination after you have analyzed direct, indirect, and cumulative effects. The dichotomous key in the "Framework" document (Table 3) leads to an effect determination. In addition, if incidental take of bull trout is anticipated, following the dichotomous key is a method which defines how the proposed action would result in incidental take, the duration of the take, as well the affected life stage(s) and life form(s).

In the conclusion section, at minimum the USFWS looks for one of the following statements:

No effect
May affect, not likely to adversely affect, ***or***
May affect, likely to adversely affect, ***or***

Note that some stream restoration projects often have short-term adverse effects during construction, but result in long-term benefits. However, the effect determination of the proposed restoration project is "*may affect, likely to adversely affect*." In the same regard, a project that has *only* beneficial effects would be considered as "*may affect, not likely to adversely affect."*

If you make a "*no effect*" determination, keep the document for your administrative record. Once the determination is made, summarize the high points that led you to it. State clearly that the proposed action is expected to have "*no effect*" on the bull trout and bull trout critical habitat based on the rationale which you provide.

E. Literature Cited *(include all cited literature in the BA in this section) Literature cited below is posted on the USFWS Montana Field Office website: http://www.fws.gov/montanafieldoffice*

USFWS. 2010. Crosswalk between the Bull Trout Matrix of Pathways and Indicators (MPI) and Primary Constituent Elements (PCEs) of Critical Habitat. Region 1, Portland, USFWS.

USFWS. 2002. Bull Trout (*Salvelinus confluentus*) Draft Recovery Plan. Portland, Oregon.

USFWS. 1998. A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation (*substitute core area*)Watershed Scale. Region 1, Portland, USFWS.