BIOLOGY TECHNICAL NOTE

WILDLIFE HABITAT APPRAISAL GUIDES FOR MONTANA

Wildlife Habitat Appraisal Guides (WHAG) provide the NRCS planner with a relatively simple and objective procedure for determining the value of wildlife habitat on any Conservation Treatment Unit (CTU), which may consist of one or more fields or even an entire farm. The guides can be used on land where wildlife is a primary resource concern, or on land (such as farmland) where wildlife is a secondary resource concern. They can be used to evaluate habitat on planning units for rangeland, farmland, forest and woodland, or conservation planning units for wildlife. Planning unit boundaries for wildlife may coincide with those delineated for rangeland, farmland, or forest and woodland; or a wildlife planning unit may be delineated that includes two or more land uses or land types.

There is no minimum size for land to be appraised as wildlife habitat. However, tracts of less than 40 acres may be limited as habitat by their size alone.

The Guides are based on the following assumptions:

1. All land and waters provide habitat for wildlife.
2. The quality of habitat is variable depending on the quality, quantity, and interspersion of food, cover, water, and space.
3. Habitat elements can be measured and compared to optimal conditions. Elements were selected to provide a measure of habitat diversity.
4. Wildlife populations are proportional to the quality and quantity of habitat available. A 400-acre planning unit may have potential to provide more diverse habitat and thus a greater variety of wildlife than does a 40-acre unit. Wildlife use of an area is dependent upon the quality of habitats it supports and the area's size.

These Guides can be used to determine if a CTU meets the minimum quality criteria found in Field Office Technical Guide (FOTG), Section III, Wildlife in a Resource Management System (RMS). Conservation practices and management measures can be identified to meet the minimum RMS standard, or to meet higher habitat quality objectives of the landowner. These Guides are not intended to be used to evaluate the potential for introducing wildlife species not presently found on the planning unit.

The WHAG's utilize a numerical rating to compare the value of existing wildlife habitat with the value of wildlife habitat under various alternatives. The Guides have been developed to consider the needs of a variety of species using a particular land-use/cover-type, a goal commonly referred to as management for species richness. They were not developed to evaluate the habitat quality for selected or featured species. The Guides may not reflect complete habitat needs or home range requirements for any particular wildlife species. They are intended to evaluate

habitat richness or diversity of the planning unit. A planning unit that exhibits high habitat diversity is likely to have equally diverse fauna. The farmland habitat guide, for instance, evaluates habitat components for a variety of wildlife species—game and non-game—commonly inhabiting farmland, not just pheasants. When a landowner is interested in improving or managing habitat for a particular species, a species-specific habitat model may be used. To date, a limited number of species-specific habitat models have been developed. If you have need for a specific model, contact the State Biologist.

Instructions for Using the Wildlife Habitat Appraisal Guides

1. Determine the landowner or landuser's objectives regarding his/her overall conservation program, interest in wildlife, and the specific conservation practices desired. Does the landowner wish to increase specific wildlife populations or maintain at present levels?

2. Based on your or the landuser's knowledge of the planning area, identify the wildlife species present on the area and their seasons of use. Are threatened or endangered species present, or other species that require special attention? Be sure to consult with Montana Department of Fish, Wildlife and Parks and U.S. Fish and Wildlife Service biologists who are familiar with the planning area. The Montana Natural Heritage Program website has a list of species of special concern (http://nhp.nris.state.mt.us).

3. Delineate the conservation treatment unit to be evaluated on an aerial photo or other suitable planning map. Wildlife planning units should be delineated by the appropriate habitat—farmland, rangeland, forest and woodland—after considering the types of habitat that occur on the farm, ranch, or CTU. Large or complex units may require the use of more than one guide to evaluate wildlife habitat suitability.

4. Use best available information for soil suitability and methods for the establishment of plants for wildlife.

5. Rating habitat quality and quantity is best done in the field with the landowner. Visit enough of the planning area to accurately evaluate habitat conditions. Keep in mind that these are guides! When encountering situations not specifically covered, use judgment to rate such elements. These Guides can be completed while collecting other resource information, such as range condition, woodland site index or USLE data.

   Rate only factors which are applicable on the CTU. For example, when rating farmland, if no wetlands are present, do not rate this factor. Do not assign a value of zero if a factor is not present unless the WHAG specifically assigns a value of zero to that factor. Be sure to adjust the number of factors inventoried when calculating the habitat value if no rating is given to one or more factors. Do not interpolate between numerical values when rating a factor – use the values given.

6. After total habitat values have been determined, look back through individual scores to find those factors that are deficient and could be improved. Any habitat element(s) that scores less than 0.5 is considered as a limiting factor. Habitat improvement efforts should be directed to overcome such limitations. Compare those deficient factors with the soils interpretation. For example, if on a cropland planning unit, a score of 0 or 0.4 for woody vegetation is indicated, refer to the Soil Survey to find the potential for growing shrubs, hardwoods, and conifers.

7. Calculating the Habitat Value:

   Total the scores for the factors rated and divide this total by the <u>number of factors rated</u>, not the total number of factors.

For example, when rating farmland, if no wetlands are present, do not rate that factor and reduce the number of factors by one.

$$\text{HABITAT VALUE:} \quad \frac{\text{Total Score}}{\text{Number of Factors Rated}}$$

8. With the landowner, develop alternatives for improving deficient factors. A conservation cropping system may improve farmland habitat quality. A small clear cut of merchantable timber may be used to create a forest opening. A planned grazing system will not only improve the score for that factor, but may in time lead to improved range condition. A stock pond will provide drinking water for wildlife as well as livestock. Shelterbelts may off-set the lack of trees and shrubs.

   For further planning guidance, refer to the Montana Biology Technical Notes and the FOTG, Section IV, Practice Standard's, Wildlife Upland Habitat Management – Code 645, and Wildlife Wetland Habitat Management – Code 644.

WILDLIFE HABITAT APPRAISAL FORM

Farmland Habitat [1/]

Owner/Operator	Acres in Planning Unit	Field Number(s)

1. Landowner's wildlife objective (Wildlife for Sport Hunting, Personal Enjoyment, etc.):

2. Wildlife species commonly found on the conservation planning unit and their season of use:

3. Appraisal of Existing Habitat Elements:

A. Cropland Quality [2/]

	Possible Score	Total Actual Score EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
No-till system. No summer fallow. (Flex crop OK; See Practice Specification Conservation Crop Rotation – Code 328). Pesticides and fertilizer applied only according to Nutrient/Pest Management Plan.	0.8			
Minimum till. No summer fallow (Flex crop OK) Nutrient/Pest Management Plan in place. At least 30% crop residue cover year-long.	0.6			
Reduced till; ≥ 30% residue cover over winter.	0.5			
Crop/fallow; 10-30% residue cover over winter.	0.3			
Traditional crop/fallow; ≤ 10% winter residue cover.	0.1			

SCORE THIS CRITERIA AT "0" IF NO CROPLAND, FOOD PLOTS OR SIGNIFICANT AREAS OF ANNUAL WEED PRODUCTION OCCUR ON THE PROPERTY; N/A IF CROPLAND ABSENT BUT SEED SOURCE IS ADEQUATE IN THE FORM OF FOOD PLOTS AND/OR WEEDY AREAS.

ADD: (Maximum Score = 1.0)
0.2 POINTS FOR FOOD PLOTS/UNHARVESTED CROPS FOR WILDLIFE
0.1 POINT FOR WINTER WHEAT IN ROTATION
0.2 POINTS FOR USE OF WOODY OR HERBACEOUS FIELD BORDERS
0.1 POINT FOR GRASS/LEGUME ROTATION

SUBTRACT:
0.1 POINTS FOR CROPS OTHER THAN GRAIN OR SEED PRODUCTION, E.G., SUGARBEETS, POTATOES, ETC.

[1/] Includes small grains, row crops, orchards, hay, pasture, etc.
[2/] Cropland includes small grain, corn, sugarbeets, oil seed crops, potatoes, etc.

B. Percent of Assessment Area that is Uncultivated

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
20 - 75%	1.0	_____	_____	_____
5 - 20% or 75 - 80%	0.5			
3 - <5% or >80 - 90%	0.3			
<3% or >90%	0.0			

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A PLANNED GRAZING SYSTEM.

C. Percent of Uncultivated Area in Winter Cover (Trees, brush, shelterbelts, cattails/bulrushes)

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
25 - 50%	1.0	_____	_____	_____
10 - <25% or >50 - 65%	0.5			
5 - <10% or >65 – 70%	0.3			
<5% or >70%	0.0			

D. Percent of Uncultivated Area in Nesting Cover (Tall grass, grass/legume mixtures, brush/grass)

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
50 - 75%	1.0	_____	_____	_____
25 - <50% or >75-80%	0.5			
10 - <25% or >80-85%	0.3			
<10% or >85%	0.0			

NOTE: Only count areas that are undisturbed throughout the nesting season (April 15 – July 15). Tall rank grasses, such as tall wheatgrass and basin wildrye qualify as both winter and nesting cover.

E. Herbaceous Vegetation Quality [3/]

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Specifically managed for wildlife nesting/ brood/roosting cover, i.e., management activities (grazing, burning, disking, haying) are conducted outside of the primary nesting season (see practice standard – Code 645), are only used as tools to restore plant vigor and are generally excluded.	1.0	_____	_____	_____
Herbaceous cover is in a long-term set-aside program.	0.9			
Grazed/burned/hayed occasionally (1 of 5 years max.) and after July 15th, in most years.	0.8			
Hay cut after July 15th, and before August 10th, or grazed after June 1st. Minimum of 10 inches of standing herbaceous cover over winter.	0.7			
Hay cut after July 1st, but before August 10th, or grazed after June 1st. Minimum of 7 inches of standing herbaceous cover over winter.	0.5			
Hay cut only once per year before July 1st, or grazed before June 1st. Minimum of 4 inches of standing herbaceous cover over winter.	0.3			
Two or more annual hay cuttings (first cutting in June) or grazed before May 1st.	0.1			

SUBTRACT:
0.2 POINTS FOR SEASON-LONG, CONTINUOUS GRAZING
0.2 POINTS FOR ANNUAL BURNING OR MOWING OF DITCHBANKS/ROADSIDES
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN
0.1 POINT FOR GRASS MONOCULTURES, I.E., NO LEGUMES OR FORBS
0.1 POINT FOR HARVESTING WHICH HERDS WILDLIFE TO CENTER OF FIELD

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR NEST COVER IN BLOCKS OF $\geq$ 40 ACRES

F. Interspersion of Habitat Components

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Distance from center of fields to permanent cover (3 or more acres) such as trees/brush, undisturbed herbaceous vegetation, wetland, etc.				
<400 feet	1.0	_____	_____	_____
400 – 800 feet	0.7			
800 – 1,300 feet	0.5			
1,300 – 1,800 feet	0.3			
>1,800 feet	0.1			

[3/] Includes hay, pasture, grass waterways, weedy fence rows, odd areas, etc. Herbaceous vegetation serves as nesting and/or concealment cover.

G. <u>Condition of Wetland Habitat</u> (N/A if no wetlands present naturally)
Mean Wetland Score (Average of Items 1-3)_____

1. Hydrological Integrity

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
No hydrological modification	0.8	_____	_____	_____
Minor hydrological modification. Primary hydrologic functions still present.	0.5			
Significant hydrological modification	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS IF WETLANDS ARE PROTECTED FROM SEDIMENTATION BY VEGETATIVE BUFFERS.

2. Native Hydrophytic Vegetation Integrity

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Native hydrophytic vegetation (all canopy layers) predominates.	1.0	_____	_____	_____
Native hydrophytic vegetation predominates; some reduction in structural diversity (i.e., invasion of non-native species and/or partial loss of one or more plant canopy layers).	0.5			
Non-native plant species predominate.	0.3			
The following noxious weeds are present and not actively being controlled: purple loosestrife, common tansy, Eurasian milfoil, salt cedar.	0.1			

SUBTRACT:
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN (SPECIES NOT LISTED IN NUMBER 2, ABOVE).

3. Wetland Management

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Wetland habitat is managed for wildlife.	1.0	_____	_____	_____
Light grazing (only occasional livestock use or use a rotational grazing system that does not allow deterioration of wetland vegetation) or occasional (one of five years) haying, but not cultivated.	0.7			
Moderate grazing (vegetative buffer present on at least half of shoreline) or frequent cultivation or haying.	0.4			
Heavy grazing or cultivation throughout the growing season.	0.2			

H. Riparian Habitat [4/] (N/A if no riparian habitat present)

Plant communities with structural characteristics providing vertical and horizontal habitat diversity for wildlife.

Plant Community Components
Grass/forb
Low shrub (<8' tall)
Tall shrub (>8' tall)
Tree

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Plant community with all 4 of the above components.	0.8	_____	_____	_____
Plant community with 3 of the above components.	0.6			
Plant community with 2 of the above components.	0.4			
Plant community with 1 of the above components.	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR RIPARIAN STANDS WITH ALL OF THE FOLLOWING: TALL (MATURE) TREE; MID-CANOPY TREE; TALL SHRUB; LOW SHRUB/HERBACEOUS LAYERS PRESENT; WOODY PLANTS ARE REGENERATING.

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A PLANNED GRAZING SYSTEM THAT INCLUDES SPECIFIC RIPARIAN MANAGEMENT OBJECTIVES.
0.1 POINTS FOR LACK OF ACTIVE CONTROL OF SALT CEDAR OR RUSSIAN OLIVE.
0.1 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN.

NOTE: Some riparian habitats do not have the potential for all four of the Plant Community Components listed above. Low gradient, "wet meadow" habitats, for example, may not support any woody vegetation. Many higher elevation stream-side habitats may not have the potential for cottonwoods and other tree species. In such situations, use judgment in comparing the existing riparian condition with the potential condition.

[4/] Rate riparian lands only when they occur within or immediately adjacent to the planning unit.

I. **Condition of Stream Habitat** (N/A if no streams present)

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
No channel/streambank alteration; banks well vegetated with deep-rooted, native species; no active downcutting, channel widening, or excessive sediment deposition.	1.0	_____	_____	_____
No channel/streambank alteration; banks with minimal human-induced erosion or sediment deposition (may be evidence of past downcutting, now stabilized); native vegetation predominates.	0.7			
No channel/streambank alteration; shallow-rooted, introduced plants common; human-induced bank erosion, downcutting, or sediment deposition moderate.	0.4			
Excessive human-induced bank erosion, sediment deposition, or downcutting; or channel/bank alteration, e.g. channelization, riprap, etc., on greater than 20% of the stream reach.	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR USE OF SCREENS TO PREVENT ENTRAINMENT OF FISH INTO IRRIGATION DITCHES AND PASSAGE STRUCTURE TO ALLOW FREE MOVEMENT OF FISH.

SUBTRACT:
0.2 POINT FOR LANDOWNER'S SEASONAL WATER WITHDRAWALS AND/OR DROP STRUCTURES, DAMS/DIVERSIONS THAT INHIBIT FISH MOVEMENT OR ACCESS TO IMPORTANT HABITATS ON LANDOWNER'S PROPERTY.

NOTE: CHANNEL/STREAMBANK ALTERATION INCLUDES RIPRAP, CHANNELIZATION, DREDGING, ETC. HUMAN-INDUCED EROSION INCLUDES GRAZING, RECREATION AND DEVELOPMENT IMPACTS.

J. **Condition of Artificial Stock Ponds/Reservoirs** (N/A if no stock ponds present)

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Reservoir managed for wildlife, i.e. stock water piped away (or use of water gap) and shoreline protected	1.0	_____	_____	_____
Shoreline only occasionally used by livestock or pond is managed under a rotational grazing system that does not allow deterioration of shoreline vegetation. (Shoreline vegetation may be significantly grazed during a part of the rotation, but not more often than 1 in 3 years.)	0.8			
Vegetative buffer present on half of shoreline; remainder of shoreline vegetation adversely affected by grazing, cultivation, etc.	0.5			
Vegetative buffer present on less than half of shoreline because of livestock, cultivation, etc.	0.3			
Shoreline trampled and vegetation removed, e.g., bare ground, from intense livestock use or other disturbances.	0.1			

4. Summation of Habitat Elements

	EXISTING SCORE	ALTERNATIVE 1	ALTERNATIVE 2
A. Cropland Quality	_____	_____	_____
B. Percent of Assessment Area that is Uncultivated	_____	_____	_____
C. Percent of Uncultivated Area in Winter Cover	_____	_____	_____
D. Percent of Uncultivated Area in Nesting Cover	_____	_____	_____
E. Herbaceous Vegetation Quality	_____	_____	_____
F. Interspersion of Habitat Components	_____	_____	_____
G. Condition of Wetland Habitat	_____	_____	_____
H. Riparian Habitat	_____	_____	_____
I. Condition of Stream Habitat	_____	_____	_____
J. Condition of Stock Ponds/Reservoirs	_____	_____	_____
TOTAL	_____	_____	_____
5. Habitat Value [5/] = Total Score / No. of Inventory Factors Rated	_____	_____	_____

6. Habitat elements in need of improvement: [6/]

7. Planning alternatives for improving habitat element deficiencies:

[5/] In order to meet the FOTG Quality Criteria for a Resource Management System, the planned system must provide a Habitat Value of 50% or higher (0.5 out of 1.0) for the CTU.

[6/] Any habitat element(s) (A through K) with a score of less than 0.5 may be considered as a limiting factor(s). Where possible and practical, direct habitat improvements to compensate for such limitations.

WILDLIFE HABITAT APPRAISAL FORM

Rangeland Habitat

Owner/Operator	Acres in Planning Unit	Field Number(s)

1. Landowner's wildlife objective (Wildlife for Sport Hunting, Personal Enjoyment, etc.):

2. Wildlife species commonly found on the conservation planning unit and their season of use:

3. Appraisal of Existing Habitat Elements:

A. Ecological Similarity Index

Note: For seeded or introduced plants, evaluate habitat elements B through F only.

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Similarity Index 51-100%	0.8			
Similarity Index 26-50%	0.5			
Similarity Index ≤ 25%	0.2			

When evaluating sage grouse habitat, i.e., sagebrush-grassland, score in the next highest category when sagebrush cover is between 10-30% and the forb/grass understory and litter cover are well developed, but the similarity index has been lowered because of sagebrush composition.

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS IF UP TO 10% OF OTHERWISE HIGH SIMILARITY INDEX RANGE (51-100%) IS COMPOSED OF LOW SUCCESSIONAL SHORT GRASS HABITATS SUCH AS PRAIRIE DOG TOWNS AND CLOSELY GRAZED AREAS. THIS ADDS BIODIVERSITY WITHOUT SIGNIFICANTLY REDUCING FORAGE PRODUCTION OR ECOLOGICAL CONDITION.

SUBTRACT:
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN.

B. Grazing Management

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Grazing specifically planned to enhance wildlife habitat by providing residual herbaceous cover Fall through Spring (meets FOTG, Section IV, practice standards and specifications, Upland Wildlife Habitat Management – Code 645 and/or Wetland Wildlife Habitat Management – Code 644). Example: Grazing period (up to 70% utilization) followed by two growing seasons rest.	1.0			

No livestock use or grazing system meets FOTG, Section IV, practice standard and specification, Prescribed Grazing – Code 528A.	0.8
Moderate, season-long grazing which does not exceed NRCS-recommended stocking rate. No planned system.	0.5
Heavy to excessive grazing with or without a planned system.	0.1

C. <u>Riparian Habitat</u> [1/] (N/A if no riparian habitat present)

Plant communities with structural characteristics providing vertical and horizontal habitat diversity for wildlife.

<u>Plant Community Components</u>
Grass/forb
Low shrub (<8' tall)
Tall shrub (>8' tall)
Tree

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Plant community with all 4 of the above components.	0.8	_____	_____	_____
Plant community with 3 of the above components.	0.6			
Plant community with 2 of the above components.	0.4			
Plant community with 1 of the above components.	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR RIPARIAN STANDS WITH ALL OF THE FOLLOWING: TALL (MATURE) TREE; MID-CANOPY TREE; TALL SHRUB; LOW SHRUB/HERBACEOUS LAYERS PRESENT; WOODY PLANTS ARE REGENERATING.

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A PLANNED GRAZING SYSTEM THAT INCLUDES SPECIFIC RIPARIAN MANAGEMENT OBJECTIVES.
0.1 POINTS FOR LACK OF ACTIVE CONTROL OF SALT CEDAR OR RUSSIAN OLIVE.
0.1 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN.

NOTE: Some riparian habitats do not have the potential for all four of the Plant Community Components listed above. Low gradient, "wet meadow" habitats, for example, may not support any woody vegetation. Many higher elevation stream-side habitats may not have the potential for cottonwoods and other tree species. In such situations, use judgment in comparing the existing riparian condition with the potential condition.

[1/] Rate riparian lands only when they occur within or immediately adjacent to the planning unit.

D. <u>Condition of Stream Habitat</u> (N/A if no streams present)

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
No channel/streambank alteration; banks well vegetated with deep-rooted, native species; no active downcutting, channel widening, or excessive sediment deposition.	1.0	_____	_____	_____
No channel/streambank alteration; banks with minimal human-induced erosion or sediment deposition, (may be evidence of past downcutting, now stabilized); native vegetation predominates.	0.7			
No channel/streambank alteration; shallow rooted, introduced plants common; human-induced bank erosion, downcutting, or sediment deposition moderate.	0.4			
Excessive human-induced bank erosion, sediment deposition, or downcutting; or channel/bank alteration, e.g., channelization, riprap, etc., on >20% of the stream reach.	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR USE OF SCREENS TO PREVENT ENTRAINMENT OF FISH INTO IRRIGATION DITCHES AND PASSAGE STRUCTURE TO ALLOW FREE MOVEMENT OF FISH.

SUBTRACT:
0.2 POINT FOR SEASONAL WATER WITHDRAWALS AND/OR DROP STRUCTURES, DAMS/DIVERSION THAT INHIBIT FISH MOVEMENT OR ACCESS TO IMPORTANT HABITATS ON LANDOWNER'S PROPERTY.

NOTE: CHANNEL/STREAMBANK ALTERATION INCLUDES RIPRAP, CHANNELIZATION, DREDGING, ETC. HUMAN-INDUCED EROSION INCLUDES GRAZING, RECREATION AND DEVELOPMENT IMPACTS.

E. <u>Condition of Wetland Habitat</u> (N/A if no wetlands present naturally)
Mean Wetland Score (Average of Items 1-3)_____

1. Hydrological Integrity

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
No hydrological modification	0.8	_____	_____	_____
Minor hydrological modification. Primary hydrologic functions still present.	0.5			
Significant hydrological modification	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS IF WETLANDS ARE PROTECTED FROM SEDIMENTATION BY VEGETATIVE BUFFERS.

2. Native Hydrophytic Vegetation Integrity

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Native hydrophytic vegetation (all canopy layers) predominates.	1.0	_____	_____	_____
Native hydrophytic vegetation predominates; some reduction in structural diversity (i.e., invasion of non-native species and/or partial loss of one or more plant canopy layers).	0.5			
Non-native plant species predominate.	0.3			
The following noxious weeds are present and not actively being controlled: purple loosestrife, common tansy, Eurasian milfoil, salt cedar.	0.1			

SUBTRACT:
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN (SPECIES NOT LISTED IN NUMBER 2, ABOVE).

3. Wetland Management

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Wetland habitat is managed for wildlife.	1.0	_____	_____	_____
Light grazing (only occasional livestock use or use of a rotational grazing system that does not allow deterioration of wetland vegetation) or occasional (one to five years) haying, but not cultivated.	0.7			
Moderate grazing (vegetative buffer present or at least half of shoreline) or frequent cultivation or haying.	0.4			
Heavy grazing or cultivation throughout the growing season.	0.2			

F. <u>Condition of Artificial Stock Ponds/Reservoirs</u> (N/A if no stock ponds present)

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Reservoir managed for wildlife, i.e. stock water piped away (or use of water gap) and shoreline protected.	1.0	_____	_____	_____
Shoreline only occasionally used by livestock or pond is managed under a rotational grazing system that does not allow deterioration of shoreline vegetation. (Shoreline vegetation may be significantly grazed during a part of the rotation, but not more often than 1 in 3 years).	0.8			
Vegetative buffer present on half of shoreline; remainder of shoreline vegetation adversely affected by grazing, cultivation, etc.	0.5			
Vegetative buffer present on less than half of shoreline because of livestock, cultivation, etc.	0.3			
Shoreline trampled and vegetation removed, e.g., bare ground, from intense livestock use or other disturbances.	0.1			

4. Summation of Habitat Elements

	EXISTING SCORE	ALTERNATIVE 1	ALTERNATIVE 2
A. Ecological Range Condition	_____	_____	_____
B. Grazing Management	_____	_____	_____
C. Riparian Habitat	_____	_____	_____
D. Condition of Stream Habitat	_____	_____	_____
E. Condition of Wetland Habitat	_____	_____	_____
F. Condition of Stock Ponds/Reservoirs	_____	_____	_____
TOTAL	_____	_____	_____
5. Habitat Value [2/] = Total Score / No. of Inventory Factors Rated	_____	_____	_____

6. Habitat elements in need of improvement: [3/]

7. Planning alternatives for improving habitat element deficiencies:

[2/] In order to meet the FOTG Quality Criteria for a Resource Management System, the planned system must provide a Habitat Value of 50% or higher (0.5 out of 1.0) for the CTU.

[3/] Any habitat element(s) (A through F) with a score of less than 0.5 may be considered as a limiting factor(s). Where possible and practical, direct habitat improvements to compensate for such limitations.

WILDLIFE HABITAT APPRAISAL FORM
Forest and Woodland Habitat

Owner/Operator	Acres in Planning Unit	Field Number(s)

1. Landowner's wildlife objective (Wildlife for Sport Hunting, Personal Enjoyment, etc.):

2. Wildlife species commonly found on the conservation planning unit and their season of use:

3. Appraisal of Existing Habitat Elements:

A. <u>Forest and Woodland Community</u>
Composition (Community Diversity)

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Forest vegetation, a complex mosaic of communities consisting of more than 4 tree species, stands uneven-aged, interspersed with diverse under-story vegetation, with numerous irregular-shaped forest openings not more than 500 feet across, occupying 5-25 percent of area. Old growth management.	1.0			
Forest vegetation dominated by only 3 or 4 species, stands uneven-aged, under-story abundant, but not as diverse as above, forest openings occasional, less than 500 feet across, occurring on 1-5 percent of area.	0.5			
Forest vegetation dominated by only 1 or 2 tree species, stands even-aged, understory vegetation scant, no forest openings or opening few or larger than 500 feet across or openings great than 40 percent of area.	0.3			

SUBTRACT:
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN.

NOTE: MANY EASTERN MONTANA FORESTS DO NOT HAVE THE POTENTIAL TO SUPPORT FOUR TREE SPECIES. PONDEROSA PINE AND ROCKY MOUNTAIN JUNIPER MAY BE THE ONLY TREES PRESENT EVEN IN VERY HIGH-CONDITION STANDS. IN THIS CASE, USE JUDGMENT IN COMPARING EXISTING CONDITIONS TO THE POTENTIAL CONDITION WHILE APPLYING THE ABOVE CRITERIA.

B. Snags for Wildlife [1/]

Snags (standing dead trees) provide a portion of the life support system for many species of birds and mammals.

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Snags 2-5/acre greater than 10 inches dbh and 5 per acre, 4-10 inches dbh.	1.0	_____	_____	_____
Snags 1 to 4 per acre 4-10 inches dbh and at least 1 per acre greater than 10 inches dbh.	0.5			
Snags 1 to 4 per acre 4 to 10 inches dbh.	0.3			
No snags.	0.0			

C. Dead and Down Logs for Wildlife

Fallen logs provides a portion of the life support system for many species of birds, mammals, reptiles and amphibians.

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
>5 down logs/acre >10” dbh	1.0	_____	_____	_____
2-5 down logs/acre >10” dbh	0.5			
<2 down logs/acre >10” dbh	0.2			
No down logs	0.0			

[1/] Snags must be well distributed in the forest stand to be most effective in the number of pairs of cavity-nesting birds and mammals they will support. Small clumps of snags well distributed in the stand are most effective.

D. Riparian Habitat [2/] (N/A if no riparian habitat present)
Plant communities with structural characteristics providing vertical and horizontal habitat diversity for wildlife.

Plant Community Components
Grass/forb
Low shrub (<8' tall)
Tall shrub (>8' tall)
Tree

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Plant community with all 4 of the above components.	0.8	_____	_____	_____
Plant community with 3 of the above components.	0.6			
Plant community with 2 of the above components.	0.4			
Plant community with 1 of the above components.	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR RIPARIAN STANDS WITH ALL OF THE FOLLOWING: TALL (MATURE) TREE; MID-CANOPY TREE; TALL SHRUB; LOW SHRUB/HERBACEOUS LAYERS PRESENT; WOODY PLANTS ARE REGENERATING.

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A PLANNED GRAZING SYSTEM THAT INCLUDES SPECIFIC RIPARIAN MANAGEMENT OBJECTIVES.
0.1 POINTS FOR LACK OF ACTIVE CONTROL OF SALT CEDAR OR RUSSIAN OLIVE.
0.1 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN.

NOTE: Some riparian habitats do not have the potential for all four of the Plant Community Components listed above. Low gradient, "wet meadow" habitats, for example, may not support any woody vegetation. Many higher elevation stream-side habitats may not have the potential for cottonwoods and other tree species. In such situations, use judgment in comparing the existing riparian condition with the potential condition.

[2/] Rate riparian lands only when they occur within or immediately adjacent to the planning unit.

E. <u>Condition of Stream Habitat</u> (N/A if no streams present)

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
No channel/streambank alteration, i.e., channelization, riprap; banks well vegetated with deep-rooted, native species; no active downcutting, channel widening, or excessive sediment deposition.	1.0	_____	_____	_____
No channel/streambank alteration; banks with minimal human-induced erosion or sediment deposition, (may be evidence of past downcutting, now stabilized); native vegetation predominates.	0.7	_____	_____	_____
No channel/streambank alteration; shallow rooted, introduced plants common; human-induced bank erosion, downcutting, or sediment deposition moderate.	0.4	_____	_____	_____
Excessive human-induced bank erosion, sediment deposition, or downcutting; or channel/bank alteration, e.g., channelization, riprap, etc., on >20% of the stream reach.	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR USE OF SCREENS TO PREVENT ENTRAINMENT OF FISH INTO IRRIGATION DITCHES AND PASSAGE STRUCTURE TO ALLOW FREE MOVEMENT OF FISH.

SUBTRACT:
0.2 POINT FOR SEASONAL WATER WITHDRAWALS AND/OR DROP STRUCTURES, DAMS/DIVERSION THAT INHIBIT FISH MOVEMENT OR ACCESS TO IMPORTANT HABITATS ON LANDOWNER'S PROPERTY.

NOTE: CHANNEL/STREAMBANK ALTERATION INCLUDES RIPRAP, CHANNELIZATION, DREDGING, ETC. HUMAN-INDUCED EROSION INCLUDES GRAZING, RECREATION AND DEVELOPMENT IMPACTS.

F. <u>Condition of Wetland Habitat</u> (N/A if no wetlands present naturally)
Mean Wetland Score (Average of Items 1-3)_____

1. Hydrological Integrity

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
No hydrological modification	0.8	_____	_____	_____
Minor hydrological modification. Primary hydrologic functions still present.	0.5			
Significant hydrological modification	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS IF WETLANDS ARE PROTECTED FROM SEDIMENTATION BY VEGETATIVE BUFFERS.

2. Native Hydrophytic Vegetation Integrity

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Native hydrophytic vegetation (all canopy layers) predominates.	1.0	_____	_____	_____
Native hydrophytic vegetation predominates; some reduction in structural diversity (i.e., invasion of non-native species and/or partial loss of one or more plant canopy layers).	0.5			
Non-native plant species predominate.	0.3			
The following noxious weeds are present and not actively being controlled: purple loosestrife, common tansy, eurasian milfoil, salt cedar.	0.1			

SUBTRACT:
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN (SPECIES NOT LISTED IN NUMBER 2, ABOVE).

3. Wetland Management

	Possible Score	Total Actual Score		
		EXISTING	ALTERNATIVE 1	ALTERNATIVE 2
Wetland habitat is managed for wildlife.	1.0	_____	_____	_____
Light grazing (only occasional livestock use or use a rotational grazing system that does not allow deterioration of wetland vegetation) or occasional (one to five years) haying, but not cultivated.	0.7			
Moderate grazing (vegetative buffer present on at least half of shoreline) or frequent cultivation or haying.	0.4			
Heavy grazing or cultivation throughout the growing season.	0.2			

4. Summation of Habitat Elements

	EXISTING SCORE	ALTERNATIVE 1	ALTERNATIVE 2
A. Forest and Woodland Community	_____	_____	_____
B. Snags for Wildlife	_____	_____	_____
C. Dead and Down Logs for Wildlife	_____	_____	_____
D. Riparian Habitat	_____	_____	_____
E. Condition of Stream Habitat	_____	_____	_____
F. Condition of Wetland Habitat	_____	_____	_____
TOTAL	_____	_____	_____
5. Habitat Value [3/] = Total Score / No. of Inventory Factors Rated	_____	_____	_____

6. Habitat elements in need of improvement: [4/]

7. Planning alternatives for improving habitat element deficiencies:

[3/] In order to meet the FOTG Quality Criteria for a Resource Management System, the planned system must provide a Habitat Value of 50% or higher (0.5 out of 1.0) for the CTU.

[4/] Any habitat element(s) (A through F) with a score of less than 0.5 may be considered as a limiting factor(s). Where possible and practical, direct habitat improvements to compensate for such limitations.