APPENDIX B

Upper Snake Province

QUALITATIVE COMPARISON OF BIOLOGICAL OBJECTIVES WITH CWA AND ESA MANDATES — ESA/CWA RATING: ++ HIGHLY SUPPORTIVE, + SUPPORTIVE, 0 NEUTRAL, - NEGATIVE

Focal Habitats/Focal Species	Limiting Factors	Biological Objectives	CWA	ESA
I) Aquatic: Yellowstone cutthroat trout Bull trout Mountain whitefish Utah valvata snail Snake River physa snail	**Impoundment and dam operation:** A. Altered hydrograph below dams prevents natural stream processes B. Fish passage barriers C. Low reservoir levels degrade the habitat of over-wintering focal species D. Low reservoir levels degrade reservoir and downstream water quality	A1. Restore natural river processes below dams (hydropower and irrigation), including peak flows that access the floodplain, to benefit focal species.	+	++
		B1. Restore upstream connectivity around dams.	+	++
		C1. Maintain sufficient reservoir levels to support overwintering focal species.	0	++
		D1. Maintain water quality downstream of dams that meets the life history needs of focal species.	++	++
		D2. Maintain reservoir water levels to support water quality requirements of focal species.	++	++
	Diversions/canals: E. Fish passage barriers F. Habitat connectivity – reduced natural flows G. Water quality H. Water quantity	E1. Restore upstream connectivity around diversions for fish passage.	+	++
		F1. Maintain flows below dams/diversions that support focal species.	++	++
		F2. Identify and reduce artificially blocked streams or unscreened diversions.	0	++
		G1. Restore water quality conditions, including stream flows, to meet focal species' needs as well as applicable water quality standards.	++	++
		H1. Maintain flows to support focal species needs including migration.	+	++
	Habitat alteration I. Channel bank stability J. Instream habitat	I1. Restore or stabilize stream reaches that have become unstable (e.g., braided channels, down-cutting, etc.) from land management practices.	+	++
		I2. Protect, enhance, and restore riparian health and function along streams supporting focal species and to meet applicable water quality standards.	+	++

Focal Habitats/Focal Species	Limiting Factors	Biological Objectives	CWA	ESA
	K. Diking/channelization	J1. Protect, enhance. and restore instream structure, diversity, and complexity (e.g., riffle/pool ratio, LWD, width/depth ratio, etc.) necessary for supporting the life history functions of focal species.	0	++
		K1. Restore or mitigate aquatic habitats and stream banks that have been artificially diked and/or channelized (note: mitigate where restoration is not possible).	0	++
	Focal species stability:	L1. Protect, enhance, and restore genetic integrity of focal species.	0	++
	L. Introduced species	L2. Maintain flows to provide connectivity/migration to meet focal species' life history needs.	++	++
	M. Isolation/fragmentation	M1. Improve connectivity of meta-populations of focal species (e.g., stream flow).	+	++
	N. Focal species recruitment	M2. Remove physical barriers that prevent migration of focal species.	+	++
	N1. Survival	N1. Improve survival of focal species in all life stages.	+	++
	N2. Abundance	N2. Increase focal species numbers to viable usable population according to the Title 36 mandate of IDFG.	+	++
II) Riparian/Wetland Western toad Yellow-billed cuckoo American beaver	A. Altered hydrograph (dams/diversions)	A1. Protect and enhance the riparian cottonwood forests in river bottoms.	+	++
	B. Changes in land use	A2. Restore bank-full discharge events below dams for riparian maintenance production.	+	++
	C. Transportation impacts	A3. Restore discharges below dams that activate floodplain function.	+	++
	D. Overgrazing	A4. Conserve water within the existing legal framework and identify and develop opportunities to improve stream flows that will benefit riparian/wetland habitats and focal species.	+	++
	E. Recreation activities are damaging riparian and wetland areas	A5. Reduce the impact of invasive plant species on native species and ecosystems.	0	++
	F. Spring flows and associated habitats are being lost to spring capping/piping for livestock tanks	B1. Prevent future loss of riparian/wetland areas.	+	++
	G. Beaver management	C1. Protect, enhance, and restore riparian and wetland function.	+	++
		D1. Protect, enhance, and restore riparian and wetland habitats where they are being impacted by grazing activities.	+	++

Focal Habitats/Focal Species	Limiting Factors	Biological Objectives	CWA	ESA
		D2. Protect, enhance, and restore springs that have been impacted by overgrazing.	+	+
		E1. Protect, enhance, and restore riparian and wetland habitats where they are being impacted by recreation activities.	+	++
		F1. Restore and protect springs at livestock watering developments.	0	+
		G1. Reintroduce beavers as a means of restoring and enhancing riparian and wetland habitats.	0	+
III) Open Water/Ponds/ Impoundments: Western grebe American white pelican Trumpeter swan Common loon	A. Water fluctuations affect loafing, feeding, nesting, and brood rearing habitat for waterfowl, colonial waterbirds, and shorebirds B. Human disturbance during nesting and brood rearing C. Lack of available or suitable habitat for waterfowl and shorebirds on ponds and impoundments	A1. Manage water levels to benefit loafing, nesting, feeding, and brood rearing habitat for waterfowl, colonial waterbirds, shorebirds, and other aquatic focal species and their habitats.	+	++
		B1. Protect colonial rookeries and waterfowl broods from disruptive human disturbance.	0	0
		C1. Protect, enhance, and restore nesting habitat for waterfowl and shorebirds on ponds and impoundments.	0	0
IV) Pine/Fir Forest: Black-backed woodpecker Great gray owl Boreal owl, Northern goshawk	A. Loss of large, late-seral stands B. Fragmentation of forest complexes C. Lack of natural fire regime D. Insect and disease damage	A1. Identify, enhance, and protect potential late-seral forest habitats to benefit focal species and achieve forest Desired Future Conditions (DFC).	0	++
		B1. Use forest management practices to achieve DFC of healthy forests.	+	++
		C1. Reduce fuel loads where appropriate. Use fire management to achieve DFC of healthy forests.	0	+
		D1. Use forest management practices to control the spread of insects and disease.	0	+
V) Juniper/Mahogany: Curl-leaf mountain mahogany	A. Lack of natural fire regime B. Competition with invasive plant species C. Loss of regeneration	A1. Restore natural fire regime to prevent juniper encroachment and restore mahogany stands.	0	0
		B1. Limit/treat exotic plants that compete with mahogany.	0	0
		C1. Limit livestock and elk grazing/browsing to allow successful mahogany regeneration.	0	0

Focal Habitats/Focal Species	Limiting Factors	Biological Objectives	CWA	ESA
VI) Whitebark Pine: Whitebark pine	A. White-pine blister rust	A1. Protect remaining stands of whitebark pine from white-pine blister rust.	0	0
		A2. Understand and establish conditions that support existing and new stands of whitebark pine.	0	++
VII) Aspen: Quaking aspen	A. Conifer encroachment	A1. Manage to have 80 percent of the mixed conifer/aspen habitat complex be in 100 percent aspen stands.	+	+
	B. Inadequate regeneration	A2. Manage aspen stands against pine/fir encroachment.	+	+
	C. Insect and disease damage	B1. Reintroduce fire to regenerate aspen in decadent/diseased aspen stands.	0	+
		B2. Manage livestock and big game to allow aspen regeneration after fire in decadent stands.	0	+
		C1. Manage insect and disease problems in aspen stands.	0	+
VIII) Mountain Brush: Antelope bitterbrush Green-tailed towhee Mule deer Rocky Mountain elk	A. Mountain brush regeneration	A1. Restore, enhance, and protect the geographic extent of remaining mountain brush habitats.	+	+
	B. Fire	B1. Manage fire to maintain mountain brush habitats.	0	0
	C. Invasive plant species competition	C1. Control invasive plant species such as cheatgrass from encroaching/replacing mountain brush habitats.	+	0
	D. Land use change	D1. Identify and protect important mountain brush habitats that lie in winter range areas and/or are vulnerable to development.	0	0

Focal Habitats/Focal Species	Limiting Factors	Biological Objectives	CWA	ESA
IX) Shrub-Steppe Northern sagebrush lizard Greater sage-grouse Sage sparrow	A. Loss of shrub-steppe habitat B. Undesirable invasive plant species competition C. Land conversion/ development D. Fire E. Juniper encroachment	A1. Protect, enhance, and restore shrub-steppe habitats. A2. Minimize impacts to native bunch grasses and forbs from livestock grazing and maintain diverse shrub-steppe canopy cover. B1. Control undesirable invasive plant species competition. C1. Reduce or eliminate land use conversion and habitat fragmentation. C2. Restore planted crested wheatgrass areas to shrub-steppe habitats. C3. Restore shrub-steppe habitats in areas displaced by cheatgrass monocultures. D1. Prevent invasive plant species establishment. E1. Treat Utah juniper encroachment on shrub-steppe habitat.	+ + 0 0 0 + 0 0	++ ++ ++ ++ ++ ++ ++ +