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| **Region:** | Cody |
| **Habitat Priority Area Name:** | Lower Bighorn River Complex |
| **Habitat Area Type (s):** | **Aquatic  Terrestrial  Combined**  Stream, reservoir, riparian, cottonwood, willow |
| **Habitat Issues:** | Reduced water flows and dewatering during irrigation, reduced water quality from overland and irrigation return flows, degraded stream banks, degraded riparian zone, and conversion of native vegetation to invasive species. |
| **Reason Selected:** | Provides habitat types for 21 native cool/warm water fish species, provides over 90 miles of connected habitat for migratory species, has the highest fish diversity in the Cody Region, is a productive sport fishery, has six species in Native Species Status (NSS) 1-3, tributaries provide high water refuge, spawning and nursery habitat, Big Horn Lake provides important winter habitat, nursery habitat, refuge from low water conditions, and a tremendous food source for fast growth.  The Bighorn River sauger is one of the few genetically pure populations remaining. Surrounding states have considered T&E listings for sauger and are requesting sauger eggs. Once extirpated reintroduced shovelnose sturgeon have reached spawning age. Low numbers of sturgeon chub were documented where believed extirpated. Native cottonwood galleries and willow stands are being replaced by non-native Russian olive and tamarisk.  Water regulation at Boysen Dam and various irrigation diversions has straightened and down-cut the Bighorn River. Increased sediment loads are affecting water quality, stream dynamics, instream habitat, and filling Big Horn Lake. Diversions are segregating stream habitat, preventing upstream fish passage and entraining fish into canals. |
| **Area Boundary Description:** | Bighorn Lake, Bighorn River, and tributary corridors. The upstream ending points are: Lower Hanover Diversion on the Bighorn River south of Worland; Penrose Dam on the Shoshone River; the Highway 30 Bridge on the Greybull River; and the Tensleep Creek confluence on the Nowood River. |
| **Focal species or species assemblage(s) (limit 6):**  **SWAP Tier 1 species:** | Sauger (T2, NSS3), shovelnose sturgeon (T2, NSS3), Burbot (T2, NSS3), channel catfish (NSS5), plains minnow (T2, NSS3), western silvery minnow (T2, NSS2)  Sturgeon Chub, Yellowstone cutthroat trout |
| **Solutions or actions:** | Work with agencies, water managers, and landowners to:  1)Improve stream flows, stream habitat, riparian vegetation, and fisheries through improved water management and efficient irrigation systems, e.g., seal canals, surge valves, sprinklers.  2) Improve upstream passage at diversions and culverts. Use screens to reduce entrainment loss, e.g., Harmony Ditch and Suez Canal sites.  3) Reconnect oxbows, side channels, and backwaters.  4) Protect and manage for native riparian vegetation to filter runoff, maintain water tables, provide late season stream recharge, and stabilize stream banks. Use riparian fencing, grazing management, fire management, and invasive species control to promote native vegetation. Remove Russian olive and tamarisk.  5) Reduce erosion and silt loading. Utilize filter strips, wetlands, silt detention ponds, minimum till practices, efficient irrigation systems, off-site livestock water, and best management practices for riparian, municipal storm and sewer water, farming, grazing, and road management. Replace push-up dams affecting water quality with fish-friendly permanent solutions.  6) Maintain Big Horn Lake water levels to provide quality fish habitat, forage production, and public recreation. |
| **Additional Information:** | Flows regulated by Boysen Dam and irrigation diversions have affected the habitat, river hydrograph, flood frequency, cottonwood development, sediment transport, and river dimensions. Diversions reduce flows and even dewater both the river and tributaries streams.  Heavy silt loads from overland runoff and return flows affect stream dynamics, smother invertebrates, reduce fish habitat, modify water temperatures and oxygen levels, injure the gills of aquatic species, reduce water clarity, impede light penetration, decrease plankton growth, and fisheries productivity. Wyoming’s portion of Big Horn Lake is rapidly filling with silt.  Tamarisk and Russian olive have replaced much of the riparian habitat around Big Horn Lake and on the Yellowtail WHMA. |
| **General land ownership and surface area:** | BLM: 34,049 ac (21%),  USFS: 0 ac (0%),  Other Federal: 9,026 ac (6%),  State: 4,737 ac (3%),  Private: 102,647 ac (64%),  Water: 10,536 ac (7%),  Total area: 160,995 ac |