

Level 4 Potential Conservation Area (PCA) Report

Name Yampa River at Hayden and Morgan Bottoms

Site Code S.USCOHP*6456

IDENTIFIERS

Site ID 222 Site Class PCA
Site Alias Yampa Wetlands

Network of Conservation Areas (NCA)

<u>NCA Site ID</u>	<u>NCA Site Code</u>	<u>NCA Site Name</u>
-		No Data

LOCATORS

Nation United States Latitude 402957N
State Colorado Longitude 1071641W

<u>Quad Code</u>	<u>Quad Name</u>
40107-D2	Mount Harris
40107-E2	Hooker Mountain
40107-D3	Hayden
40107-E3	Rock Spring Gulch
40107-E4	Ralph White Lake
40107-D4	Breeze Mountain
40107-D1	Milner

County

Routt (CO)
Moffat (CO)

<u>Watershed Code</u>	<u>Watershed Name</u>
14050001	Upper Yampa

SITE DESCRIPTION

Minimum Elevation	6,200.00	Feet	1,890.00	Meters
Maximum Elevation	6,400.00	Feet	1,951.00	Meters

Site Description

Hayden and Morgan Bottoms encompasses approximately 18 mi of wetlands/riparian bottom lands along the Yampa River. The Yampa River meanders across a wide floodplain of Quaternary alluvium ranging in elevation from approximately 1,896 to 1,920 m (6,320 to 6,400 ft). The surrounding uplands lie within a transition area between Upper Cretaceous Lewis Shale and Upper Cretaceous Lance Formation (Tweto 1981). The existing TNC-owned land consists of 569 acres (4.4 river miles) along the Yampa River. Morgan Bottoms contains a number of high quality stands of the box elder - narrowleaf cottonwood / red-osier dogwood (*Acer negundo* - *Populus angustifolia* / *Cornus sericea*) riparian forest and large cottonwood stands with the potential to be restored. Associated shrubs include thinleaf alder (*Alnus tenuifolia*), Pacific willow (*Salix lucida* ssp. *caudata*), and hawthorn (*Crataegus rivularis*). Cobble bars on the insides of meander bends support several regenerating stands of narrowleaf cottonwood (*Populus angustifolia*) and coyote willow (*Salix exigua*). Irrigated hay meadows and grazing pastures dominate the floodplain adjacent to the riparian communities. Cultivated uplands support wheat (*Triticum aestivum*) and barley (*Hordeum vulgare*) in the northeastern portion of the site. Smuin Gulch, an intermittent stream, flows into the site from the southwest, and Cary Ditch (formally Cary Gulch) flows the site from the northwest. Large hay meadows dominated by grasses are scattered between and adjacent to the riparian forests. There are patches of colonizing narrowleaf cottonwoods on gravel bars along the river. Several creeks confluence with the Yampa within the site: Wolf, Goose, Morgan, Dry, and Sage, as well as the following gulches: Stokes, Coal Bank, and Smuin. Several ditches which divert water from the Yampa also exist within the site, they include: Gibraltar, Walker, and Brock Adair. Highway 40 and the Denver/Rio Grande railroad tracks bisect the site. Sewage disposal ponds are located west of Hayden at Stokes Gulch.

Key Environmental Factors

Key processes influencing the riparian system include: natural flooding (hydrologic) regime; migration of river channel and meander cut-off processes, and sediment deposition (geomorphic regime) creates regeneration sites (point bars) for recruitment and establishment of cottonwoods; and human activities, such as livestock grazing and hay production. Holly Richter, graduate student in the Department of Range Science at Colorado State University, is developing an ecological model as part of her Ph.D. dissertation research.

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Climate Description

Precipitation occurring near Craig, Colorado (about 7 road miles west of the site) is approximately 13.5 inches annually. There is a slight peak in precipitation in August from afternoon convective thundershowers. Mean January temperature is -7.7 C, with mean July temperature 19.4 C.

Land Use History

No Data

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes

Mapped Date 01/06/1997

Designer Culver, D.R., B.E. Neely and T.E. Juenger

Boundary Justification

Our conservation objective at this site is to protect the deciduous riparian forest ecosystem, represented by a variety of successional stages of the deciduous riparian forest, including those processes which maintain and regenerate the riparian plant communities. The proposed boundary contains most of the natural floodplain which supports both high and lower quality deciduous riparian forest with high potential to be restored. The proposed preserve boundaries encompass the active floodplain and Greater Sandhill Crane habitat. For the most part, the primary and secondary boundaries encompass the floodplain consisting of Holocene and Pleistocene valley alluvium delineated on the Craig surficial geologic map. This is the area across which the river has actively meandered for approximately the last 5,000 years. The northeast boundary is extended beyond this active floodplain to include important staging grounds for the Greater Sandhill Crane. The primary and secondary boundaries are largely coincident. Results from Holly Richter's ecological modeling work will further refine the preserve boundaries. Additionally, Rich Madole will be producing a more detailed map of the alluvium of the site for use using smaller-scaled aerial photographs.

Primary Area 6,821.85 Acres

2,760.72 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B2: Very High Biodiversity Significance

Biodiversity Significance Comments

This site contains several good occurrences of a community which is imperiled on a global scale. The Yampa River at Morgan and Hayden Bottoms is one of the best sites within the Yampa River system with one of the most outstanding occurrences of the globally imperiled (G2/S2) *Acer negundo* - *Populus angustifolia* / *Cornus sericea* cottonwood forest. This Box elder - narrowleaf cottonwood / Red-osier dogwood community is restricted to the Yampa and White River Basins of northwest Colorado, and is not known to occur outside the state. It is best developed along the Yampa River for approximately 30 miles, between Craig and Milner, Colorado at elevations between 6,200- 6,800 ft. Most of the sites that may have supported this community have been extirpated or highly altered as a result of domestic livestock grazing or conversion to agriculture. There are also good (B-ranked) and poor (D-ranked) occurrences of the state rare (G5T4/S2B) Greater Sandhill Crane (*Grus canadensis tabida*). Sandhill Cranes are listed as U.S.F.S. sensitive and Colorado Threatened species. Morgan Bottoms is the second largest Greater Sandhill Crane staging area in Colorado and the best staging area in northern Colorado. Morgan Bottoms is crucial to the survival of the Colorado breeding population of Greater Sandhill Cranes (V. Graham, personal communication). Beginning in the middle of August and reaching greatest numbers by the first week of September, nesting pairs and fledglings come to Morgan Bottoms, where they stay until they migrate south in mid to late September. Colorado breeding pairs must have access to the staging grounds in the northwestern part of the state. While thousands of cranes which breed in other states utilize the San Luis Valley along their migration path, the breeding population in Colorado is very small and designated as state endangered (approximately 115 nesting pairs documented in 1991). The site is also used for nesting; four nests were discovered there in 1991 (V. Graham, personal communication). This entire stretch of the Yampa River has been used as winter range by the Bald Eagle (*Haliaeetus leucocephalus*). There is an extant occurrence of the globally vulnerable (G3/S2) roundtail chub (*Gila robusta*). The globally critical imperiled (G1/S2) Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*) and razorback sucker (*Xyrauchen taxanus*) occur in the lower reaches of the Yampa.

Other Values Rank V2 - High values

Other Values Comments

The Yampa River, which lies within the proposed Upper Colorado River Basin Bioreserve, is one of the last

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essentially free-flowing rivers in Colorado. This site provides good habitat for many wildlife species. Though the state endangered river otter (*Lutra canadensis*) has not been confirmed to date at Morgan Bottoms, the dense riparian vegetation, backwater sloughs, presence of beaver, and potential for large water flows suggest that the Yampa may be an ideal location for them. Rosamond (Roz) Garcia, who lives on the Carpenter tract, observed otter tracks in mid-January 1991, but no signs of otters were observed on a subsequent survey conducted by Alan Carpenter and Leslie Malville (January 30, 1991), possibly because the river was frozen. According to the Colorado Division of Wildlife's Latilong Database, Morgan Bottoms is Rocky Mountain elk (*Cervus elaphus*) winter range as well as a Canada Goose (*Branta canadensis*) production area. The riparian forest also provides good habitat for mule deer (*Odocoileus hemionus*) and red fox (*Vulpes fulva*).

LAND MANAGEMENT ISSUES

Land Use Comments

There is no sign of livestock grazing within the "island" on the east end of the site. The "island" is apparently little used by elk in the winter, judging from the lack of browsing on the cottonwoods and dogwoods. Other riparian forests on the south side of the river are grazed by horses. The grassy meadows on the site are primarily used for hay production. One unimproved road leads to the "island", and various unofficial campsites and roads exist. This area is used as an access to the river by fisherman and picnickers/campers, and several campfire rings exist (the gate closing off this area is in disrepair). Trash is found in this area. Several unimproved roads bisect the south-central portion of the site, one leading to a hay meadow, and the other leading to a small ranch house and beyond. There is also a small ranch house just south of U.S. Hwy 40 that currently lies within the proposed boundary. Another unimproved road enters the area from the north on the far west end of the site. A small dam of gravel is located at the south end of the island, diverting water to the Doolin property. Water is pumped to an area southeast of the proposed preserve for irrigation of alfalfa. There has been some cutting of cottonwood trees along the river. Irrigated hay meadows and grazed cow pastures lie immediately adjacent to the cottonwood stands. Some cottonwood stands are protected by fencing. Cattle use the unfenced stands in the winter for protection and for shade in the summer. The land north of the river, in the south half of Section 35, has been heavily grazed in the past and is in a highly degraded condition. Lands north of the Yampa River are used for production of wheat and barley. The area is an important elk winter range and local ranchers have problems with elk eating hay during the winter months. A number of ranch homes and associated buildings occur within the proposed boundary. Shelton, Walker, and other minor ditches traverse the site, bringing water from the river to irrigated hay meadows. The Carpenter tract is currently operated as a cattle ranch. A significant portion of the riparian forest has been converted to irrigated pasture land.

Natural Hazard Comments

Hazards normally associated with rivers, forests, and mountain topography.

Exotics Comments

Exotic species are concentrated along irrigation ditches, roads, in hay meadows, and in previously cleared areas near historic buildings. These include timothy (*Phleum pratense*), bentgrass (*Agrostis stolonifera*), yellow sweet clover (*Melilotus officinalis*), reed canarygrass (*Phalaris arundinacea*), Canada thistle (*Cirsium arvense*), Kentucky bluegrass (*Poa pratensis*), dandelion (*Taraxacum officinalis*), orchard grass (*Dactylus glomerata*), and dalmation toadflax (*Linaria genistrifolia* spp. *dalmatica*). Hay meadows are dominated by meadow fescue (*Festuca pratensis*), red clover (*Trifolium pratense*), orchard grass (*Dactylus glomerata*) and smooth brome (*Bromus inermis*). Leafy spurge (*Euphorbia esula*), a noxious weed, is a major problem downstream and west of Hayden.

Offsite

Most of the uplands surrounding the site are rangelands dominated by sagebrush and other shrubs. The town of Hayden lies directly west of the site and there are several sewage disposal ponds. Several small ranch homes lie to the northeast, land directly north and south are used for hay production. A gravel pit lies to the east across the county road, where the shrub understory has almost completely been eliminated from the cottonwood forest. A pump station, which provides water to the nearby Hayden power plant's cooling pond, lies north of US Highway 40 where the highway bridge crosses the Yampa River. There are defunct coal strip mines upstream of the site.

Information Needs

An investigation is needed to determine if the sewage disposal ponds and ditching on the site (contact Jack Rickman, Public Works, Hayden) are having a negative impact on the riparian community. We also need to investigate possible gravel pit impact on the water table and the riparian community. Additional information is needed on the historical and current land use of the site. Further documentation by Colorado Division of Wildlife on Greater Sandhill Crane and other wildlife species use in the area is needed. Understanding the

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interactions between ground water, flood flows, channel migration, and maintenance of the riparian plant community at the site is a critical information need. The effects of the irrigation ditches and the Hayden power plant pumping station on the riparian community and hydrology should also be investigated. We need to determine the ownership and extent of water rights on the ditches which run through the site. An investigation is needed to determine how much water the diversion on Hayden Bottoms is taking out of the river, and whether this activity is legal. It should be determined who maintains the bridge crossing the Yampa River and if there are plans to expand the bridge.

ASSOCIATED ELEMENTS OF BIODIVERSITY

<u>Element</u>			<u>Global</u>	<u>State</u>	<u>Driving</u>
<u>State ID</u>	<u>State Scientific Name</u>	<u>State Common Name</u>	<u>Rank</u>	<u>Rank</u>	<u>Site Rank</u>
24479	<i>Acer negundo</i> - <i>Populus angustifolia</i> / <i>Cornus sericea</i> Forest	Narrowleaf Cottonwood Riparian Forests	G2	S2	Yes
24479	<i>Acer negundo</i> - <i>Populus angustifolia</i> / <i>Cornus sericea</i> Forest	Narrowleaf Cottonwood Riparian Forests	G2	S2	No
23668	<i>Grus canadensis tabida</i>	Greater Sandhill Crane	G5T4	S2B,S4N	No
24479	<i>Acer negundo</i> - <i>Populus angustifolia</i> / <i>Cornus sericea</i> Forest	Narrowleaf Cottonwood Riparian Forests	G2	S2	Yes
24479	<i>Acer negundo</i> - <i>Populus angustifolia</i> / <i>Cornus sericea</i> Forest	Narrowleaf Cottonwood Riparian Forests	G2	S2	Yes
21249	<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S1B,S3N	No
24479	<i>Acer negundo</i> - <i>Populus angustifolia</i> / <i>Cornus sericea</i> Forest	Narrowleaf Cottonwood Riparian Forests	G2	S2	No
24479	<i>Acer negundo</i> - <i>Populus angustifolia</i> / <i>Cornus sericea</i> Forest	Narrowleaf Cottonwood Riparian Forests	G2	S2	No
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24479	<i>Acer negundo</i> - <i>Populus angustifolia</i> / <i>Cornus sericea</i> Forest	Narrowleaf Cottonwood Riparian Forests	G2	S2	No
23668	<i>Grus canadensis tabida</i>	Greater Sandhill Crane	G5T4	S2B,S4N	No
24738	<i>Populus angustifolia</i> / <i>Salix exigua</i> Woodland	Narrowleaf Cottonwood Riparian Forests	G4	S4	No
23668	<i>Grus canadensis tabida</i>	Greater Sandhill Crane	G5T4	S2B,S4N	No
24479	<i>Acer negundo</i> - <i>Populus angustifolia</i> / <i>Cornus sericea</i> Forest	Narrowleaf Cottonwood Riparian Forests	G2	S2	No
23668	<i>Grus canadensis tabida</i>	Greater Sandhill Crane	G5T4	S2B,S4N	No
24738	<i>Populus angustifolia</i> / <i>Salix exigua</i> Woodland	Narrowleaf Cottonwood Riparian Forests	G4	S4	No

REFERENCES

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<u>Reference ID</u>	<u>Full Citation</u>
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167701	Madole, Richard F. 1982. Surficial Geologic Map of the Craig 1/2 x 1 Quad. Moffat and Routt Counties, Colorado. 1:100,000.
159555	Neely, B., and K. Gellenbeck. 1991. Short-form Preserve Design for Yampa River at Coal Bank Gulch, Routt County, Colorado.
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170790	Richter, B. and H. Richter. May 12 and June 9, 1992. Personal Communication (memos on riparian ecosystem and review of draft preserve design).
172073	Richter, H. 1992. Grant Proposal for Funding Through TNC's Rodney Johnson and Katherine Ordway Stewardship Endowments.
172950	Richter, H. June 24, 1992. Personal Communication (memo and map of remaining cottonwood stands and regeneration sites along the Yampa).
172269	Richter, H. October 23, 1992. Personal Communication (memo regarding geologic map).
164181	Schnurr, P. 1991. Colorado Division of Wildlife. Grand Junction, Colorado. Personal Communication. 303-248-7180.
161556	Tweto, O. 1981. Geologic Map of the Craig 1 degree x 2 degree Quadrangle, Northwestern Colorado 1:250,000. USGS Misc. Investigations Series.

ADDITIONAL TOPICS

Additional Topics

No Data

VERSION

Version Date 01/06/1997

Version Author Culver, D.R., B.E. Neely and T.E. Juenger

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