County	Park	**Upstream River Mile**	539.4
Classification	CM: Confined meandering	**Downstream River Mile**	535
General Location	Big Creek to Six Mile Cr	**Length**	4.40 mi (7.08 km)

Narrative Summary

Reach PC6 is 4.4 miles long, extending from the mouth of Big Creek to the mouth of Six Mile Creek. The reach has a fairly narrow riparian corridor and Channel Migration Zone (CMZ), indicating low rates of channel movement. Over two miles of the bankline in Reach PC6 are armored, by both rock riprap (7,371 feet) and flow deflectors (3,278 feet). Over 20 percent of the total bankline in this reach is armored, and all of that armor was in place in 2001. The armor protects both exurban and irrigated lands.

The amount of flood irrigated lands in Reach PC6 has dropped by one half since 1950 (200 acre reduction), and there has been commensurate development into pivot (85 acres) and sprinkler (93 acres) during that time. The overall footprint of agricultural lands within Reach PC6 has dropped by about 500 acres, with 450 of those acres converting to exurban development. About 11 acres of irrigated land in Reach PC6 are within the Channel Migration Zone. As the CMZ is quite narrow in this reach, it indicates that these irrigated lands extend essentially to the streambank. There is one boat ramp on the right bank at RM 536.8.

This area of the upper Yellowstone River basin experienced three severe floods in the last 20 years. The largest floods were in 1996 and 1997, when the 32,200 cfs peak flow measured at the Corwin Springs gage exceeded a 100-year flood for those two years in a row. The 1974 and 2011 floods were major as well, with both events exceeding 30,000 cfs. The Corwin Springs gage is located upstream of Reach PC6 at the Corwin Springs Bridge.

A hydrologic evaluation of flow depletions in the reach indicates that flow alterations over the last century have been minimal in this reach. Flow reductions due to human influences are estimated to be less than 2 percent for both high and low flows.

CEA-Related observations in Reach PC6 include:
- Conversion of agricultural land to exurban development
- Agricultural and exurban development close to the active channel within the CMZ

Recommended Practices (may include Yellowstone River Recommended Practices--YRRPs) for Reach PC6 include:
- CMZ Management due to extensive encroachment of irrigated lands to edge of river.

The following table summarizes some key CEA results that have been used to describe overall condition and types of human influences affecting the river. The values are specific to this single reach. Blanks indicate that a particular value was not available for this area. This information is consolidated from a large dataset that is presented in more detail in the full reach narrative report.

Discharge	Undev.	Developed	% Change	"Undeveloped" flows represent conditions prior to significant human development, whereas "developed" flows reflect the current condition of both consumptive and non-consumptive water use.
2 Year (cfs)	19,100	19,000	-0.5%	
100 Year (cfs)	36,000	36,000	0.0%	

Bankfull Channel Area (Ac)	1950	1976	1995	2001	1950-2001	Bankful channel area is the total footprint of the river inundated at approx. the 2-year flood.
	176.9			169.6	-7.3	

Physical Features	2011 Length (ft)	% of Bankline	2001-2011 Change	There are additional types of bank armor such as car bodies and steel retaining walls, but they are relatively minor.
Rock RipRap	7,371	16.2%	0	
Concrete Riprap	0	0.0%	0	
Flow Deflectors	3,278	7.2%	0	
Total	**10,649**	**23.4%**	**0**	

Length of Side Channels Blocked (ft)	Pre-1950s	Post-1950s	Numerous side channels have been blocked by small dikes.
	0	0	

Floodplain Turnover	1950 - 1976	1976 - 2001	1950-2001 In-channel riparian encroachment (negative number indicates retreat)	The rate of floodplain turnover reflects how many acres of land are eroded by the river. Tunover is associated with the creation of riparian habitat.
Total Acres			acres	
Acres/Year				
Acres/Year/Valley Mile				

Open Bar Area	Point Bars	Bank Attached	Mid-Channel	Total	The type and extent of open sand and gravel bars reflect in-stream habitat conditions that can be important to fish, amphibians, and ground-nesting birds such as least terns.
Change in Area '50 - '01 (Ac)					

Floodplain Isolation	Acres	% of FP	Floodplain isolation refers to area that historically was flooded, but has become isolated do to flow alterations or physical features such as levees.
5 Year			
100 Year			

Restricted Migration Area	Acres	% of CMZ	Channel Migration Zone restrictions refer to the area and percent of the CMZ that has been isolated by features such as bank armor, dikes, levees, and transportation embankments.
	24.2	8%	

Land Use	1950	2011		1950	2011	Changes in land use reflect the development of the river corridor through time. The irrigated agricultural are is a sub-set of the mapped agricultural land.
Agricultural Land (Ac)	1,278.4	770.1	Flood (Ac)	409.1	177.9	
Ag. Infrastructure (Ac)	17.3	85.9	Sprinkler (Ac)	0.0	92.5	
Exurban (Ac)	4.0	446.2				
Urban (Ac)	0.0	0.0	Pivot (Ac)	0.0	84.5	
Transportation (Ac)	40.7	42.1				

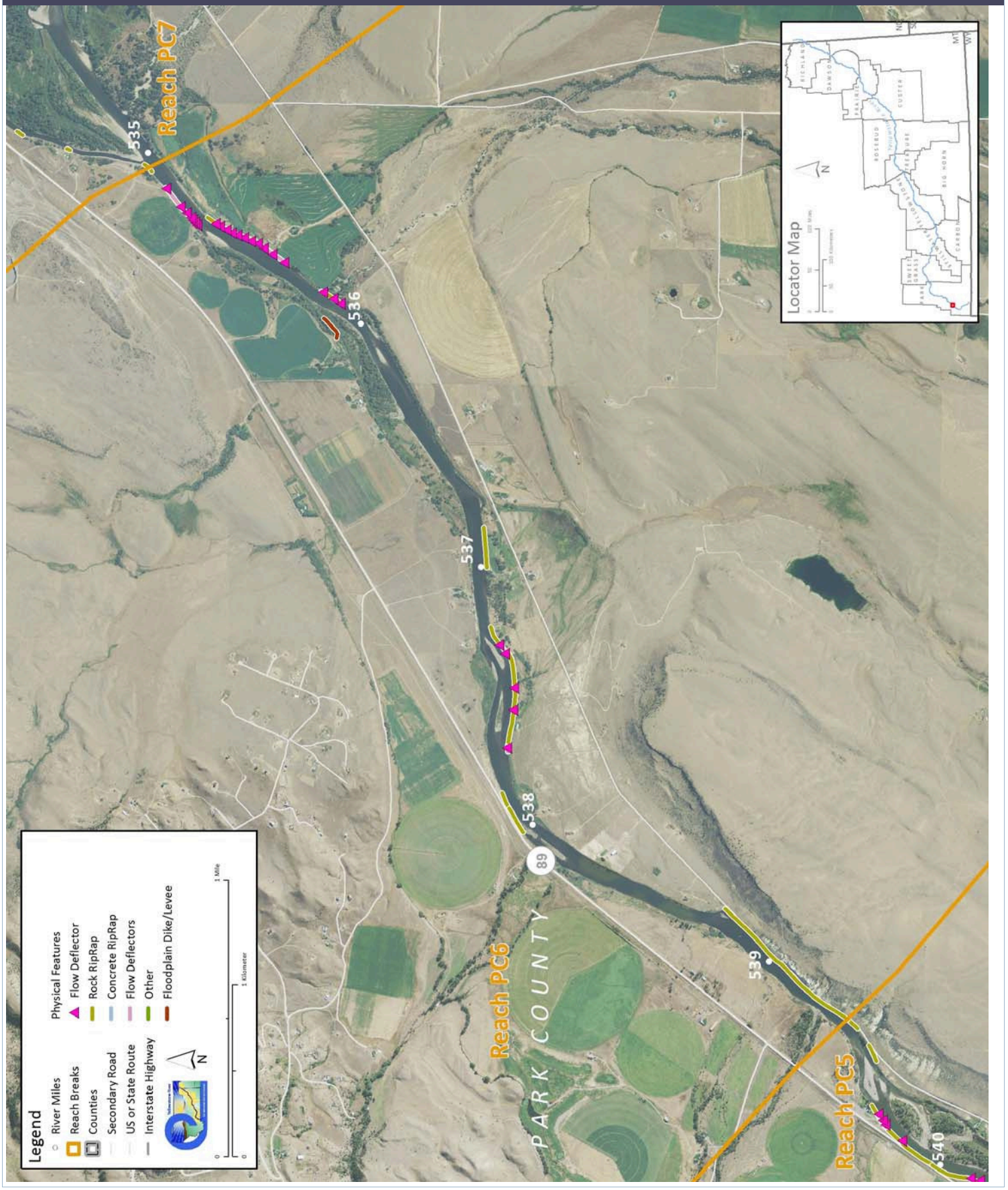
1950s Riparian Vegetation Converted to a Developed Land Use (ac)	To Irrigated	To Other Use	Total Rip. Converted	% of 1950s Rip.	Changes in the extents of riparian vegetation are influenced by land use changes within the corridor.

National Wetlands Inventory	Acres	Acres per Valley Mi	Total Wetland Acres	Wetlands units summarized from National Wetlands Inventory Mapping include Riverine (typically open water sloughs), Emergent (marshes and wet meadows) and Shrub-Scrub (open bar areas with colonizing woody vegetation).
Riverine	1.0	0.2		
Emergent	62.6	15.3	**77.2**	
Scrub/Shrub	13.6	3.3		

Russian Olive (2001) (Appx. 100-yr Floodplain)	Acres	%	Russian olive is considered an invasive species and its presence in the corridor is fairly recent. Its spread can be used as a general indicator of invasive plants within the corridor.
	0.0	0.1%	

Riparian Forest at low risk of Cowbird Parasitism (Ac/Valley Mile)	1950	1976	2001	Change 1950-2011	Cowbirds are associated with agricultural and residential development, displacing native bird species by parasitizing their nests.

PHYSICAL FEATURES MAP (2011)



CHANNEL MIGRATION ZONE MAP