INTRODUCTION

The Powder River is a major tributary of the Missouri River in Montana. It originates in the Absaroka Mountains and flows through the Bighorn Basin before joining the Missouri River. The river is characterized by a series of meanders and oxbow lakes, which have undergone significant changes over time due to natural and human-induced processes.

CONSTRUCTING CHANNEL MAPS FROM AERIAL PHOTOGRAPH

The process of constructing channel maps from aerial photographs involves several steps. First, the aerial photographs are scanned and digitized to create a high-resolution map. Then, the map is analyzed using Geographic Information System (GIS) software to identify changes in the channel geometry. The GIS software can also be used to create contour lines and other features that help to visualize the changes in the river channel.

CHANNEL CHANGES BETWEEN 1938 AND 1978

Changes in the Powder River channel between 1938 and 1978 are documented in the figure above. The changes are measured using geographic information system (GIS) analysis of aerial photography. The results indicate that the river channel has undergone significant changes, including changes in channel width, depth, and meander characteristics.

Table 1. AERIAL-PHOTOGRAPHY DATA, POWDER RIVER COUNTY, MONTANA

<table>
<thead>
<tr>
<th>Date</th>
<th>Channel Width (m)</th>
<th>Channel Depth (m)</th>
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<tbody>
<tr>
<td>1938</td>
<td>60.0</td>
<td>4.0</td>
</tr>
<tr>
<td>1978</td>
<td>70.0</td>
<td>5.0</td>
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CONCLUSION

The Powder River has undergone significant changes in its channel geometry over time. These changes are attributed to both natural and human-induced processes, including channel erosion and deposition. The analysis of aerial photography provides valuable insights into the historical evolution of the river channel and can be used to inform future management and conservation efforts.

REFERENCES