

EXPLANATION FOR PLATE 1

- ALLUVIAL DEPOSITS (QUATERNARY)**
Qa1 Unit 1--Sorted shale, silt, sand, and gravel primarily associated with the downcutting of the Missouri River and its tributaries in their channels.
Qa2 Unit 2--Silt, sand, and gravel deposited in the Pleistocene(?) channel of the Musselshell River and its western tributary.
OK KINTYRE FORMATION (PLEISTOCENE)--Local deposits of tan silt and sand; thin layers of pebbles uncommon; bedding mostly massive, but with local crossbedding and contorted beds.
Tfu FORT UNION FORMATION (PALEOCENE)--Interbedded yellow, gray, and brown sandstone, crossbedded channel sandstone, siltstone, sandy and silty shale, and lignite; plant fragments and silicified wood common. Only Tullock and part of Lebo Members are present. Maximum thickness about 61 m.
Kh HELL CREEK FORMATION (UPPER CRETACEOUS)--Lenticular beds of gray and tan, poorly cemented, medium- to fine-grained sandstone; gray, brown, green, pink, and mauve siltstone and mudstone; green and brown bentonite and bentonitic mudstone; minor lignite, carbonaceous shale, and conglomerate. Upper contact at "r" coal bed (Collier and Knechtel, 1939). Dinosaur and mammal remains common; large-scale crossbedding; sandstones locally cemented to form ellipsoidal, log-like bodies parallel to bedding. 0-97 m thick.
Kf FOX HILLS SANDSTONE (UPPER CRETACEOUS)--Poorly cemented, fine- to medium-grained sandstone, siltstone, and shale; lower 9-12 m consists of light-gray-weathering, fine-grained sandstone, siltstone, and claystone transitional into Bearpaw shale below; upper part is yellow and light brown, mostly fine grained sandstone with small-scale crossbedding and 2-7-cm brown limonite concretions. Locally present at top of formation is colgate Member consisting of up to 18 m of white argillaceous sandstone; transitional with lower part of Hell Creek Formation north and east of Seven Blackfoot Creek. 0-40 m thick.

- Kb** BEARPAW SHALE (UPPER CRETACEOUS)--Dark-gray argillaceous shale; thin green, brown, and cream-colored bentonite; brown ironstone and gray fossiliferous limestone concretions; alternating thick units of bentonitic shale with "popcorn" weathering and fissile, silty shale; ammonites and molluscs common in concretions. 0-350 m thick.
Kje JUDITH RIVER FORMATION (UPPER CRETACEOUS)--Light-gray and brown, crossbedded, poorly cemented, medium-grained quartz sandstone; lignite and carbonaceous shale; orange limestone concretions; brown to black silty and sandy shale transitional with overlying Bearpaw Shale. Upper 60 m exposed.
af ARTIFICIAL FILL--Identified by Jensen and Varnes (1964).
- CONTACT---Dashed where gradational or indefinite
 - - - FAULT---U, upthrown side; D, downthrown side
 - - - STRIKE AND DIP OF BEDS
 ===== PLEISTOCENE(?) STREAM CHANNEL

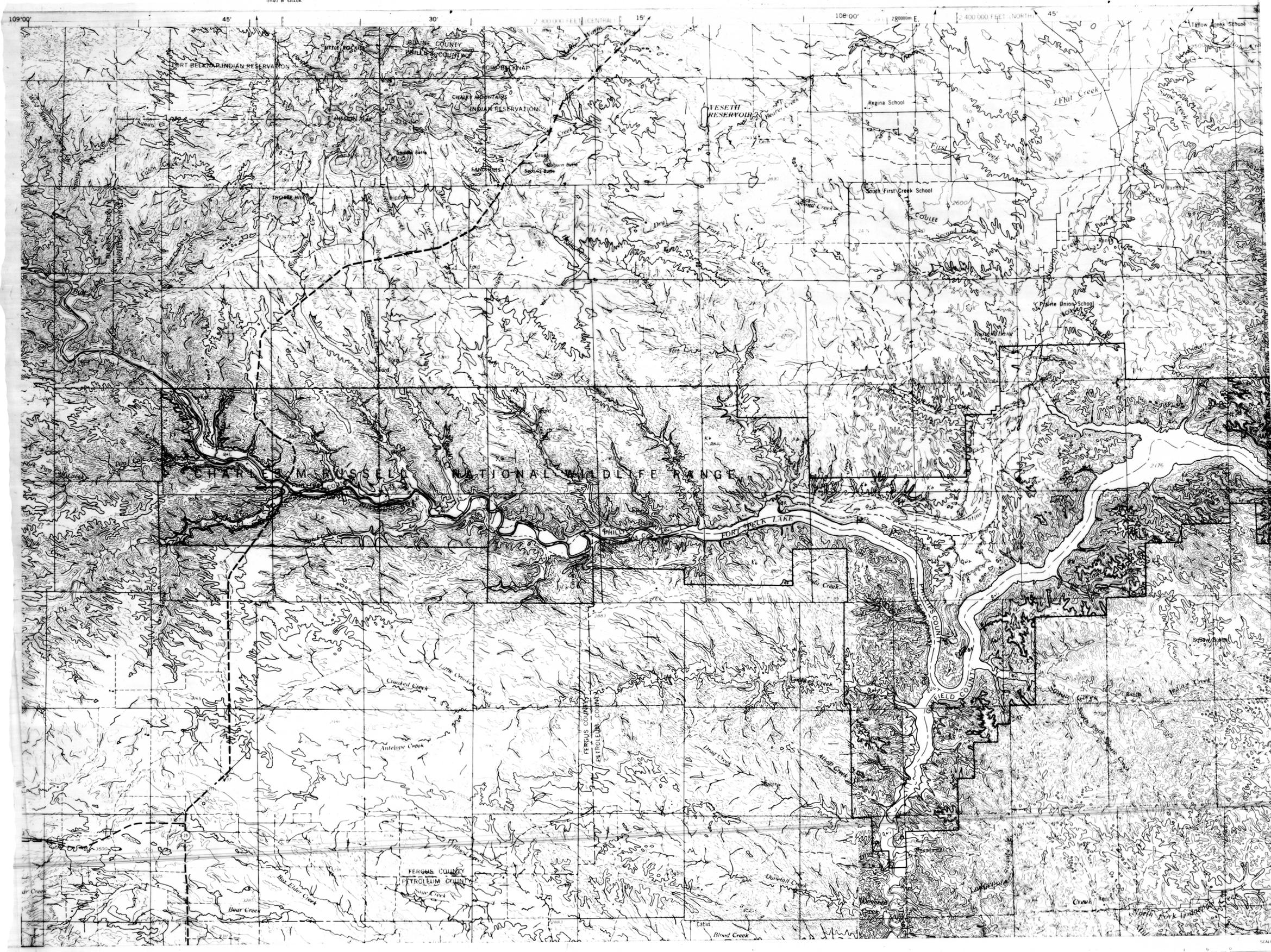


PLATE 1.- GEOLOGIC MAP OF THE CHARLES M. RUSSELL WILDLIFE REFUGE, FERGUS, MONTANA

by
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