Flathead Chub (*Platygobio gracilis*) Proposed as Threatened in Nebraska

Species Description:

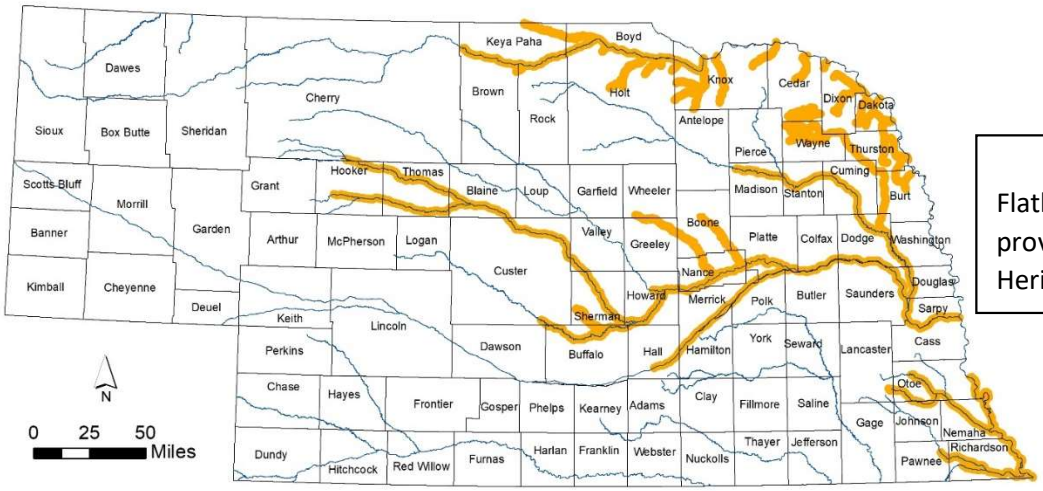
The Flathead Chub is named for its broad, flat (wedge-shaped) snout which extends beyond its upper lip. It has a small, distinctive barbel in the corner of its mouth. Breeding males sometimes have red on their fins.

Habitat:

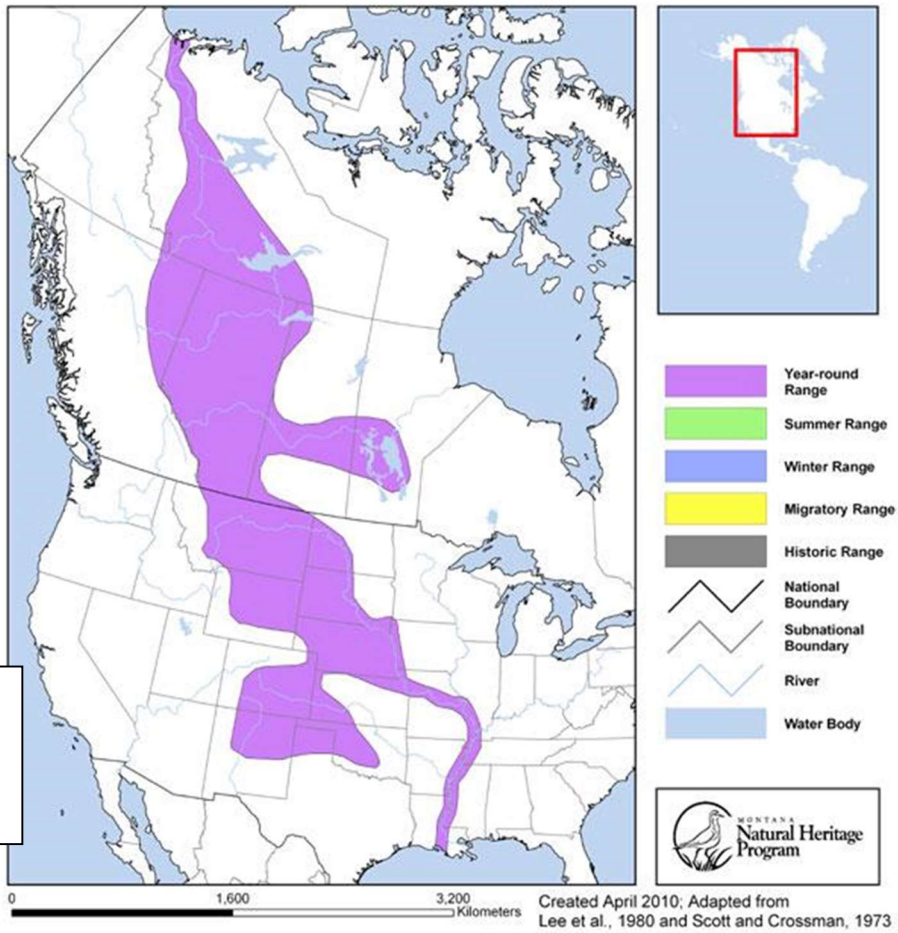
- Prefer large, turbid rivers with relatively fast currents over gravel or sand substrates
- In MO Riv., age-0 Flathead Chub are only found in very slow (mean velocity 0.1 m/sec) and shallow (mean depth 0.4 m) habitats
- As they grow, they utilize faster and deeper water until as adults they are found in fairly fast (mean velocity 0.8 m/sec) and moderately deep water (mean depth 1.8 m).
- A long, relatively natural reach of river (~114 mi of unimpounded stream length) may be necessary to support viable populations of Flathead Chub
- Peak spawning occurs in deep, main channels between early to late summer from May to August in response to increased stream flows
- Stronger currents help to keep their non-adhesive, semi-buoyant eggs afloat until hatchlings emerge
- May move into riffle habitats to release eggs
- Able to feed successfully, mainly on crustaceans, at high turbidities

Distribution:

- Native to four major drainage basins: the MacKenzie, the Saskatchwan, the Missouri/Mississippi, and the Rio Grande
- East of the Rockies, it is found in the MO and lower MS Riv. systems
- Nebraska is the center of the southern portion of their range. Flathead Chub are native to all of the state's large rivers except the Blue Riv. System
- In 1945 on the MO Riv. near Peru, NE, the Flathead Chub comprised 23% of the fish sampled in small-mesh seines and was the third most abundant species sampled
- Native to the Platte Riv. System; there are few historical records from the South Platte drainage



Estimated current range of the Flathead Chub in Nebraska. Map provided by the Nebraska Natural Heritage Program.



Map illustrating North American distributional range of the Flathead Chub (Montana Natural Heritage Program and Montana Fish, Wildlife and Parks 2018).

Factors Affecting the Species:

- Listed as a species of greatest conservation need in all states bordering NE. Listed as state endangered in IA and MO. Listed as state threatened in KS.
- U.S. Fish and Wildlife Service Species of Concern
- U.S. Forest Service Sensitive Species
- Distribution decreasing throughout its range and in Neb. by at least 25–50%
- Population decline is likely >50% in Neb.
- Flathead Chub were found at a smaller percentage of sites in Nebraska than during historical surveys: decline of 77% (numbers) and 46% (sites).
- Relative abundance of Flathead Chub declined by 98% in the channelized section of the MO Riv. (Ponca to the NE/KS state line), and they may be extirpated upstream of Gavins Point Dam.
- MO Riv. in Neb. has been fragmented by Gavins Point Dam and further impacted by Ft. Randall Dam, which have isolated populations, created river reaches that are not of sufficient length to allow drifting eggs to

mature, altered hydrology of the river to impact habitat formation and drift rates, and eliminated much of the sediment load to result in much less turbidity

- In a 1994 survey of 13 MO Riv. sites, only 1 Flathead Chub was seen.
- Below Gavins Point Dam, Flathead Chub are also rarely collected with only 6 observations, all occurring below the Platte Riv. Confluence
- Threats:
    - Dams and irrigation development; completely disappeared from the Republican River basin of Neb.; several dams built in the basin along with extensive irrigation development have cut the river into short segments, reduced flows, and changed the timing of flows
    - Generally unable to successfully reproduce in river fragments (<113 river mi)
    - Channelization downstream of Ponca S. P. has eliminated much of the habitat, especially very slow and shallow areas, used typically by the youngest life stages
    - Sportfish are often introduced into reservoirs. Reservoirs, being less turbid than streams, allow these fish predators to hunt more effectively. The reduced turbidity in reservoirs also favors fish competitors that forage by using their sight.
    - Groundwater removal can lower the water table and lead to dry conditions
    - Overgrazing of riparian areas can alter stream conditions and pollute water, leaving it unsuitable
    - Methane extraction process can lead to increased flows and toxins in the water

(viii) For species proposed to be added under this subsection but not for species proposed to be removed under this subsection, developed an outline of the potential impacts, requirements, or regulations that may be placed on private landowners, or other persons who hold state-recognized property rights on behalf of themselves or others, as a result of the listing of the species or the development of a proposed program for the conservation of the species as required in subsection (1) of section 37-807.

<u>Implications</u>:

I. Fisheries regulations Title 163, Chapter 2, 009 already restrict baitfish to specific species.
    A. The collection of state-listed fish species may be allowed with a Scientific and Education Permit issued by the Nebraska Game and Parks Commission.

II. A prohibition already exists against seining or trapping any fish in the streams listed below to prevent take of species currently listed as endangered or threatened
    i. Brush Creek west of Brownlee in Cherry County
    ii. Cottonwood Creek in Keya Paha County
    iii. East Holt Creek in Keya Paha County
    iv. Gordon Creek west of Highway 61 in Cherry County
    v. Holt Creek in Keya Paha County
    vi. Niobrara River east of Box Butte Reservoir and west of Highway 385 in Dawes County
    vii. Taylor Creek west of Highway 81 in Madison County

III. Any project that is permitted, funded, or carried out in part or full by any state agency on public or private land requires that state agency to coordinate with the Nebraska Game and Parks Commission to prevent the “take” (take means to harass, harm, pursue, hunt, shoot, wound, kill,

trap, capture, or collect or attempt to engage in any such conduct) of species on the Nebraska State Threatened or Endangered Species List.

A. Site Specific requirements to prevent "take" of these fish species will be recommended during coordination between the state agency and the Nebraska Game and Parks Commission. Such requirements will only be applicable within or near the modeled distribution of these fishes, and may include, but are not limited to:
    i. New surface water rights (uses) may be limited or reduced.
    ii. Some chemicals which are approved for overwater use may not be acceptable for use in streams with these fish. Guidance documents will be made available.
    iii. Release of piscivorous fish may be prohibited in some areas.
    iv. Work or projects conducted in stream or river channels may not be allowed during the spawning periods of these fish.
    v. Bank stabilization may be limited.
    vi. Grazing (as part of a management plan developed with the assistance of a state agency) along streams where these fish occur may be limited or controlled.
    vii. Upland erosion or soil disturbances will need to be designed to avoid and minimize sedimentation of streams where these fish occur.
    viii. Certain projects (e.g., pond construction) may need to be located outside of the floodplain of streams and rivers.
    ix. Aquatic organism passage will need to be considered for in-stream structures (e.g., culverts, dams, weirs)

<u>Proposed Wildlife Regulation</u>:

004.02 Include Flathead Chub in Table of Threatened Species, Location: Entire