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Culaea inconstans - (Kirtland, 1840)
Brook Stickleback

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Unique Identifier: ELEMENT_GLOBAL.2.105068
Element Code: AFCPA02010
Informal Taxonomy: Animals, Vertebrates - Fishes - Bony Fishes - Other Bony Fishes

Kingdom	Phylum	Class	Order	Family	Genus
Animalia	Craniata	Actinopterygii	Gasterosteiformes	Gasterosteidae	Culaea

Genus Size: A - Monotypic genus

Check this box to expand all report sections:

Concept Reference

Concept Reference:
Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.N. Lea, and W.B. Scott. 1991. Common and scientific names of fishes from the United States and Canada. American Fisheries Society, Special Publishing 20. 183 pp.
Concept Reference Code: B91ROB01NAUS
Name Used in Concept Reference: *Culaea inconstans*
Taxonomic Comments: This species exhibits significant clinal variation in dorsal and pelvic spine lengths and in body depth, as well as complex behavioral differences among populations (see Sublette et al. 1990). See Gach (1996) for information on geographic variation in mtDNA and biogeography. See McLennan (1993) for a phylogenetic analysis of the Gasterosteidae based on behavioral characters.

Conservation Status

NatureServe Status

Global Status: G5
Global Status Last Reviewed: 20Jun2007
Global Status Last Changed: 20Sep1996
Rounded Global Status: G5 - Secure
Nation: United States
National Status: N5
Nation: Canada
National Status:N5

U.S. & Canada State/Province Status

United States	Colorado (S4), Connecticut (SNA), Illinois (S2S3), Indiana (S4), Iowa (S4), Kentucky (SNA), Maine (S2), Michigan (S5), Minnesota (SNR), Montana (SU), Nebraska (S3), New Mexico (SNA), New York (S3), North Dakota (SNR), Ohio (SNR), Pennsylvania (S3), Rhode Island (SNA), South Dakota (S4), Utah (SNA), Vermont (S3), Washington (SNA), Wisconsin (S4)
Canada	Alberta (S5), British Columbia (S5), Manitoba (S5), New Brunswick (S5), Northwest Territories (SNR), Nova Scotia (S3), Ontario (S5), Quebec (S5), Saskatchewan (S5)

Other Statuses

NatureServe Conservation Status Factors

Global Abundance: 100,000 to >1,000,000 individuals
Global Abundance Comments: Adult population size is unknown but certainly exceeds 100,000.

Estimated Number of Element Occurrences:> 300
Estimated Number of Element Occurrences Comments: This species is represented by a large number of occurrrences (subpopulations) (e.g., see map in Lee et al. 1980).

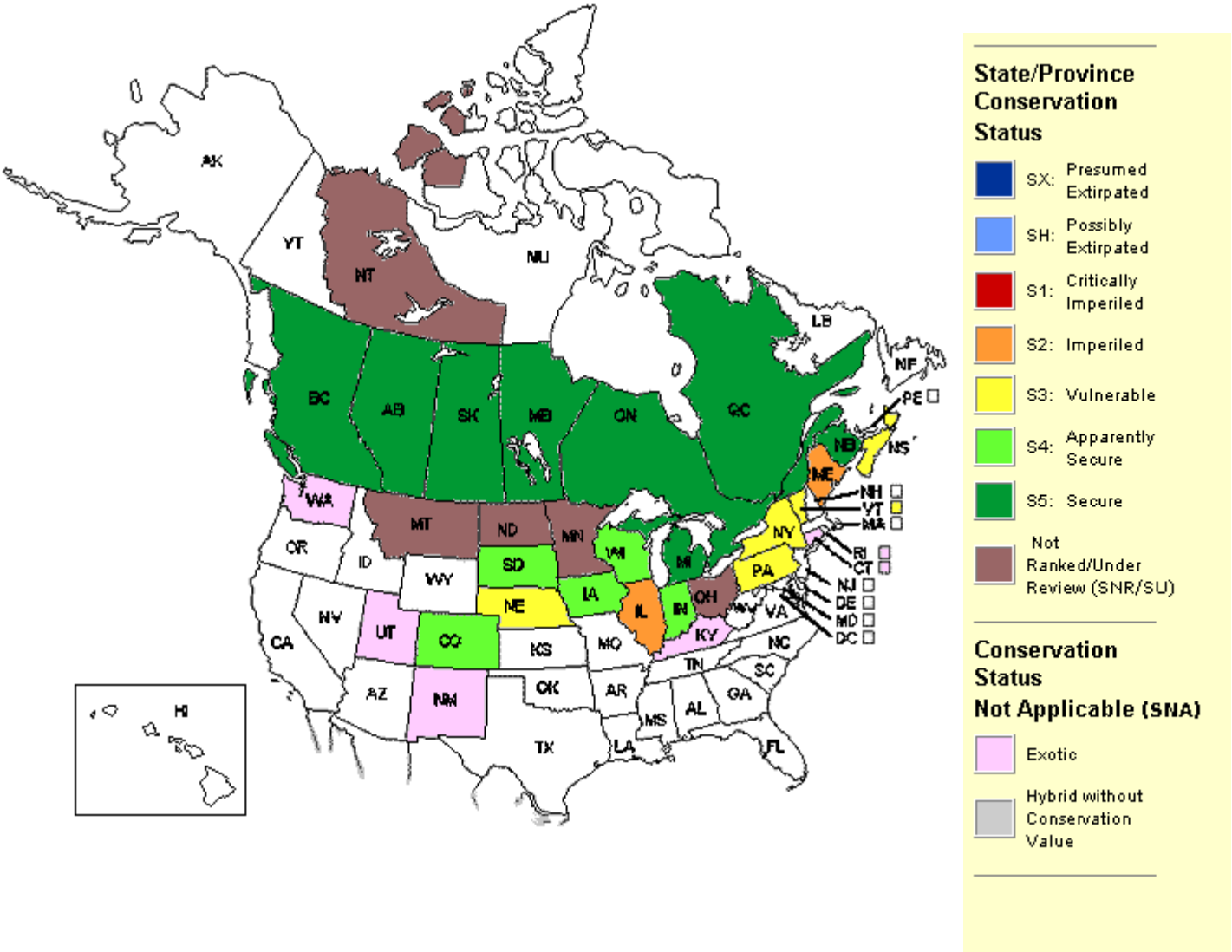
Global Short Term Trend:
Stable (unchanged or within +/- 10% fluctuation in population, range, area occupied, and/or number or condition of occurrences)
Global Short Term Trend Comments:
Extent of occurrence, area of occupancy, number of subpopulations, and population size probably are relatively stable or declining at a rate of less than 10% over 10 years or three generations.

Global Long Term Trend: Relatively stable (+/- 25% change)

Degree of Threat: Unthreatened
Threat Scope: Insignificant
Threats: No major threats are known.

Distribution

U.S. States and Canadian Provinces



Endemism: occurs (regularly, as a native taxon) in multiple nations

U.S. & Canada State/Province Distribution	
United States	CO, CT*, IA, IL, IN, KY*, ME, MI, MN, MT, ND, NE, NM*, NY, OH, PA, RI*, SD, UT*, VT, WA*, WI
Canada	AB, BC, MB, NB, NS, NT, ON, QC, SK

Range Map

No map available.

Global Range Comments:

The range includes most of the southern half of Canada (Atlantic and Arctic drainages from Nova Scotia to Northwest Territories) and the northern part of the eastern United States, extending south in the Great Lakes-Mississippi River basins to Colorado (Woodling 1985), Nebraska, Illinois, Ohio, Pennsylvania. A population in northeastern New Mexico was regarded as probably introduced (through bait bucket or incidental to stocking of exotic salmonids) by Sublette et al. (1990) and Gach (1996), though the apparent native status in eastern Colorado (Woodling 1985) suggests that the New Mexico population could be native. Brook sticklebacks have been introduced in various places south of the native range, such as in Alabama, Kentucky, Tennessee, northwestern Colorado, northeastern Utah (Modde and Haines 1996, Great Basin Nat. 56:281), and California. Present distribution was influenced by postglacial dispersal from separate refugia in the Mississippi and Ohio river basins (Gach 1996).

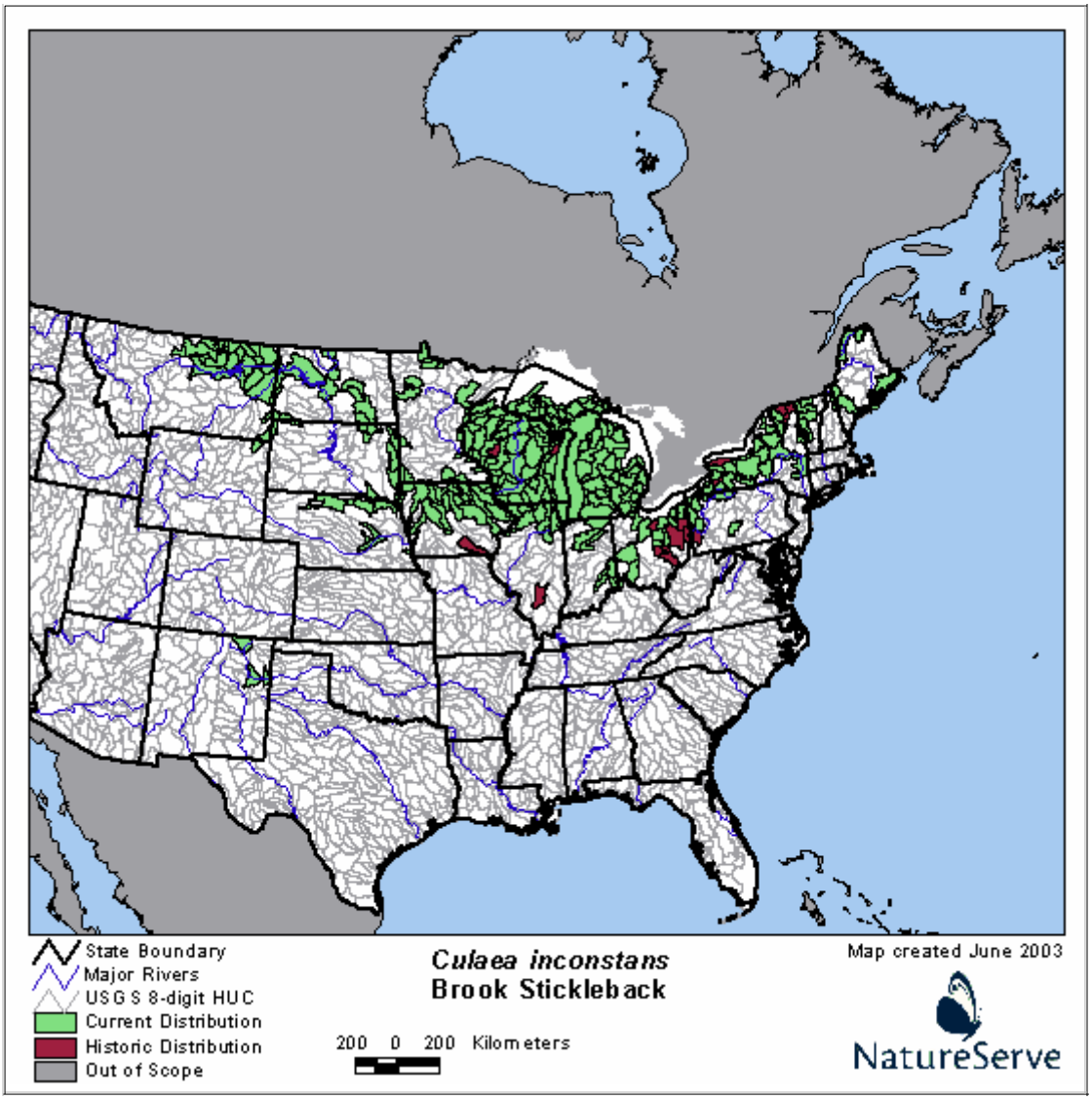
U.S. Distribution by County (based on available natural heritage records)	
State	**County Name (FIPS Code)**

NE	Antelope (31003), Brown (31017), Buffalo (31019), Cedar (31027), Cherry (31031), Custer (31041), Dawson (31047), Douglas (31055), Keith (31101), Keya Paha (31103), Kimball (31105), Lincoln (31111), Loup (31115), Otoe (31131), Sarpy (31153), Saunders (31155), Sheridan (31161), Valley (31175), Washington (31177)
NM	Colfax (35007), Quay (35037)
PA	Crawford (42039), Erie (42049), Mercer (42085)
SD	Brookings (46011), Brown (46013), Clay (46027), Codington (46029), Day (46037), Deuel (46039), Grant (46051), Kingsbury (46077), Lincoln (46083), McCook (46087), Miner (46097), Roberts (46109), Union (46127)
VT	Addison (50001), Chittenden (50007), Franklin (50011), Grand Isle (50013), Orleans (50019)

U.S. Distribution by Watershed (based on available natural heritage records)

Watershed Region	Watershed Name (Watershed Code)
02	Otter (02010002), Winooski (02010003), Lamoille (02010005), Missisquoi (02010007), Lake Champlain Direct (02010008)
04	Chautauqua-Conneaut (04120101)
05	Shenango (05030102)
07	Upper Minnesota (07020001), Lac Qui Parle (07020003)
10	Upper Niobrara (10150003), Middle Niobrara (10150004), Snake (10150005), Lower Niobrara (10150007), Upper James (10160003), Mud (10160005), North Big Sioux Coteau (10160010), Lewis and Clark Lake (10170101), Vermillion (10170102), Upper Big Sioux (10170202), Lower North Platte (10180014), Lower Lodgepole (10190016), Lower South Platte (10190018), Middle Platte-Buffalo (10200101), Lower Platte (10200202), Salt (10200203), South Loup (10210004), Upper North Loup (10210006), Lower North Loup (10210007), Calamus (10210008), Big Papillion-Mosquito (10230006), Keg-Weeping Water (10240001)
11	Canadian headwaters (11080001), Upper Canadian-Ute Reservoir (11080006), Revuelto (11080008)

U.S. Distribution by Watershed (based on multiple information sources)



Ecology & Life History

Reproduction Comments:
Spawns spring and summer (about mid-May to mid-July in Manitoba, Moodie 1986). Females may spawn every few days when food is abundant. Eggs hatch in 7-11 days. Male tends eggs and fry. Sexually mature by age I, age II and III also are included in the breeding population (Becker 1983, Lee et al. 1980, Moodie 1986).

Ecology Comments
Population size varied greatly among years in a Manitoba lake; summer kill and winter kill common; recolonization via intermittent runoff streams (Moodie 1986).

Habitat Type: Freshwater

Non-Migrant: N

Locally Migrant: N

Long Distance Migrant: N

Mobility and Migration Comments:
Migrationlike movements have been observed, (Becker 1983), but the context of the movements is not definitely known.

Riverine Habitat(s): CREEK, Low gradient, MEDIUM RIVER, SPRING/SPRING BROOK

Lacustrine Habitat(s): Shallow water

Palustrine Habitat(s): FORESTED WETLAND

Special Habitat Factors: Benthic

Habitat Comments:
This species generally occupies cool, clear, heavily weeded, spring-fed creeks, small rivers, lakes, and ponds, usually in shallow, quiet to flowing pools and backwaters over sand or mud. Sometimes it burrows into soft bottoms. Occasionally this fish can be found in brackish water. In a lake in Manitoba, adults were most abundant at the outer margin of emergent vegetation (Moodie 1986). Eggs are deposited in a nest made of plant material by the male just above the bottom in shallow water.

Adult Food Habits: Herbivore, Invertivore, Piscivore

Immature Food Habits: Herbivore, Invertivore, Piscivore

Food Comments:
Eats various aquatic invertebrates (including eggs and larvae), eggs and larvae of fishes, and algae. In a Manitoba lake, was opportunistic but heavily dependent on arthropods (Moodie 1986).

Length: 8 centimeters

Economic Attributes

Management Summary

Population/Occurrence Delineation

Group Name: STICKLEBACKS

Use Class: Not applicable
Minimum Criteria for an Occurrence:
Occurrences are based on evidence of historical presence, or current and likely recurring presence, at a given location. Such evidence minimally includes collection or reliable observation and documentation of one or more individuals (including eggs and larvae) in appropriate habitat.
Separation Barriers: Dam lacking a suitable fishway; high waterfall; upland habitat.
Separation Distance for Unsuitable Habitat: 10 km
Separation Distance for Suitable Habitat: 10 km
Separation Justification: Data on dispersal and other movements generally are not available.

Separation distance (in aquatic kilometers) is arbitrary but reflects the likely low probability that two occupied locations separated by less than several kilometers of aquatic habitat would represent truly independent populations over the long term.

Because of the difficulty in defining suitable versus unsuitable habitat, especially with respect to dispersal, and to simplify the delineation of occurrences, a single separation distance is used regardless of habitat quality.
Date: 21Sep2004
Author: Hammerson, G.

Population/Occurrence Viability

U.S. Invasive Species Impact Rank (I-Rank)

Authors/Contributors

NatureServe Conservation Status Factors Edition Date: 20Jun2007
Element Ecology & Life History Edition Date: 20Jun2007
Element Ecology & Life History Author(s): Hammerson, G.

Zoological data developed by NatureServe and its network of natural heritage programs (see **Local Programs**) and other contributors and cooperators (see **Sources**).

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Note: This report was printed on **August 18, 2008**

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Acknowledgement Statement for Bird Range Maps of North America:
"Data provided by NatureServe in collaboration with Robert Ridgely, James Zook, The Nature Conservancy - Migratory Bird Program, Conservation International - CABS, World Wildlife Fund - US, and Environment Canada - WILDSPACE."

Citation for Mammal Range Maps of North America:
Patterson, B.D., G. Ceballos, W. Sechrest, M.F. Tognelli, T. Brooks, L. Luna, P. Ortega, I. Salazar, and B.E. Young. 2003. Digital Distribution Maps of the Mammals of the Western Hemisphere, version 1.0. NatureServe, Arlington, Virginia, USA.

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