Lamarra 1981). Least chub hybrids have been reported from springs near Callao, Utah, where least chubs once existed. But no hybrids have been reported from Leland Harris Springs Complex where least chub habitat has not been greatly altered by humans (Lamarra 1981).

Another potential threat to the least chub is a proposed mosquito abatement program for Juab County. The BLM has rejected the County's request to implement a mosquito control spraying program in marsh and spring areas on BLM administered lands (R. Fike, in litt. 1992). The rejection does not prevent the county from spraying on privatelyowned lands. The effect of a mosquito control spraying program on the least chub is uncertain. Past studies (Workman et al. 1979) indicate that much of the least chub's diet is composed of insects, which includes mosquito larvae. To date, no studies have been undertaken to determine the effects of toxins on the chub or its environment.

Due to the extremely limited distribution of this species, least chub are very susceptible to stochastic events. There are only five known populations of least chub, and each population is small. A single catastrophic event could destroy a significant portion of remaining least chubs, or one or more of their populations. These remaining populations are vital in maintaining the genetic diversity of the species.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining whether to propose this listing action. Based on this evaluation, the preferred action is to list the least chub as endangered since this fish is restricted to only five known populations. Habitat loss and degradation continue to reduce its numbers in these remaining populations. Without additional protection of its habitat, continued degradation by livestock will result in a further reduction in its numbers. Competition and predation by other nonnative fishes pose severe threats to the remaining populations. The least chub is highly susceptible to additional habitat degradation and to habitat and population losses. For the reasons discussed below, the Service also is proposing to designate critical habitat for the least chub.

Critical Habitat

Critical habitat is defined in section 3 of the Act as: "(i) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are

found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by a species at the time it is listed * * * *, upon a determination by the Secretary that such areas are essential for the conservation of the species." "Conservation" means the use of all methods and procedures needed to bring the species to the point at which listing under the Act is no longer necessary.

Section 4(a)(3) of the Act, as amended, and implementing regulations require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the same time the species is determined to be endangered or threatened. Critical habitat is being proposed for the least chub to include the following areas in Utah.

Northern Snake Valley Group including: Redding Springs Complex (Tooele County) and Bagley Ranch Springs Complex (Tooele and Juab Counties).

Southern Snake Valley Group including: Miller Spring (Juab County); Leland Harris Springs Complex (Juab and Millard Counties); Gandy Salt Marsh Complex (Millard County); and Bishop Springs Complex (Millard County).

Tule Valley Group including: Coyote Spring Complex (Millard County); Willow Spring (Millard County); Tule Springs Complex (Millard County); and South Tule Springs (Millard County). Legal descriptions for these areas are provided in the "Proposed Regulation Promulgation section.

In determining the areas to designate as critical habitat for a species, the Service considers those physical and biological attributes that are essential to species conservation. In addition, the Act stipulates that the areas containing these elements may require special management consideration or protection. Such physical and biological features are stated in 50 CFR 424.12 and include, but are not limited to, the following items:

- (1) Space for individual growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
 - (3) Cover or shelter;
- (4) Sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and generally,
- (5) Habitats that are protected from disturbance or are representative of the

historical, geographical and ecological distributions of a species.

In designating critical habitat, the Service is concerned with constituent elements within the defined areas that are essential to the conservation and recovery of the species. The areas proposed as critical habitat for the least chub provide the necessary constituent elements determine essential to the survival and recovery of the least chub. They include the following:

- —adequate water quantity to: (1) maintain underground aquifer function, spring flow pressure and volume, and spring water surface elevation, (2) allow the fish to complete its life cycle (spawning, rearing, feeding, etc.), and (3) allow for movement between integral parts of its habitat and to reduce the overlap with niches of other native fishes;
- —sufficient vegetation in spring and surrounding marsh riparian areas to provide cover, food, spawning sites, prevent erosion, and to meet other life history requirements of the fish; and
- a biological environment in which there is little or no interaction with nonnative fishes.

The Service recognizes that those habitats proposed as critical are not sufficient to achieve recovery for the species because they do not represent the historic range or all of the widely diverse habitat types that the species historically evolved in and occupied. The UDWR and BLM are currently surveying least chub habitats throughout its historic range to determine if the requisites necessary for recovery are still available. The Service, in the process of developing a "Least Chub Recovery Plan," may utilize these new data to identify additional critical habitat areas needed to ensure the recovery of the species. The Service may, at a future date, repropose critical habitat for the least chub.

Section 4(b)(8) of the Act requires, for any proposed or final regulation that designates critical habitat, a brief description and evaluation of those activities that may adversely modify or destroy such habitat or those activities that may be affected by such designation. Activities, such as habitat alterations through livestock impacts, pollution, or dewatering, would be detrimental to the survival of this species. Additionally, activities that provide for increased access to remote spring sites or that alter ground water or deep aquifer spring sources and flow rates would also be considered detrimental. Predation and competition from nonnative species on least chubs