DROMEDARY PEARLYMUSSEL
Dromus dromas

SPECIES CODE: F00K I01

STATUS:
On June 14, 1976, the dromedary pearlymussel was designated as endangered throughout its entire range in Kentucky, Tennessee, and Virginia (USFWS 1976), except where listed as experimental populations (in the free-flowing reach of the Tennessee River below the Wilson Dam, Colbert and Lauderdale Counties, AL) (USFWS 2001). A recovery plan addressing the dromedary pearlymussel was approved in July 9, 1984 (USFWS 1984).

SPECIES DESCRIPTION:
The dromedary pearlymussel is a medium-sized (reaching up to 90 mm in length) freshwater mussel with a yellowish green shell with two sets of broken green rays. The life span of the species is greater than 50 years (USFWS 1984, VFWIS 2003). Like other freshwater mussels, the dromedary pearlymussel feeds by filtering food particles from the water column. The specific food habits of the species are unknown, but other juvenile and adult freshwater mussels have been documented to feed on detritus, diatoms, phytoplankton, and zooplankton (Churchill and Lewis 1924). The diet of dromedary pearlymussel glochidia, like other freshwater mussels, comprises water (until encysted on a fish host) and fish body fluids (once encysted).

REPRODUCTION AND DEVELOPMENT:
The reproductive cycle of the dromedary pearlymussel is similar to that of other native freshwater mussels. Males release sperm into the water column; the sperm are then taken in by the females through their siphons during feeding and respiration. The females retain the fertilized eggs in their gills until the larvae (glochidia) fully develop. The mussel glochidia are released into the water, and within a few days they must attach to the appropriate species of fish, which they parasitize for a short time while they develop into juvenile mussels. The species is bradytictic and glochidia are contained in conglutinates that are similar in appearance to freshwater leeches or flatworms (Jones and Neves 2001). In a recent investigation, a fecundity of approximately 55 to 250,000 glochidia per mussel was estimated for the dromedary pearlymussel by determining the mean number of mature glochidia associated with conglutinates from four females. Ages of valves examined indicate that the species life span is as long as 25 years (Jones and Neves 2001). Recent studies have identified the fantail darter (*Etheostoma flabellare*) as a glochidial host for the dromedary pearlymussel. Laboratory studies also identified the following potential host species: the banded darter (*Etheostoma zonale*), tangerine darter (*Percina aurantiaca*), logperch (*Percina caprodes*), and gilt darter (*Percina evides*) (Watson and Neves 1998). Jones and Neves (2001) recently confirmed the suitability of the banded darter, tangerine darter, and logperch and identified the following additional glochidial host species: black sculpin (*Cottus baileyi*), greenside darter (*Etheostoma blennioides*), snubnose darter (*Etheostoma simoterum*), blotchside logperch (*Percina burtoni*), channel darter (*Percina copelandi*), and Roanoke darter (*Percina roanoka*).

RANGE AND POPULATION LEVEL:

This species was historically widespread in the Cumberland and Tennessee River systems (Bogan and Parmalee 1983). It was last collected from Mussel Shoals, an 85 km reach of the Tennessee River in Alabama, prior to 1931 (van der Schalie 1939) and is presumed to be extirpated from the shoal. The species survives at a few shoals in the Powell and Clinch Rivers in Tennessee and Virginia, and possibly in the Cumberland River in Tennessee (USFWS 1984, Neves 1991). Nine occurrences of the species were recorded during a 1980 survey by Virginia Tech and the Tennessee Valley Authority; however, the dromedary pearlymussel is currently believed to be reduced to only three reproducing populations (NatureServe 2003).

HABITAT:
The dromedary pearlymussel inhabits small to medium, low turbidity, high to moderate gradient streams. The species is commonly found near riffles on sand and gravel substrates with stable rubble (USFWS 1984). Though commonly associated with shallow, high velocity riffles and shoals, individuals have been found in deeper (up to 18 feet in depth), slower waters (USFWS 1984).

PAST THREATS:
Many of the historic populations of the dromedary pearlymussel were apparently lost when the river sections they inhabited were impounded. Over 50 impoundments on the Tennessee and Cumberland Rivers have eliminated the majority of riverine habitat for the species in its historic range (ESIS 1996, USFWS 1984). The Powell River and upper tributaries of the Clinch River, in particular, are also subject to sediment and particulate matter loading from coal mining activities (Stansbery 1973). Other threats that are attributed to population declines are similar to those described in the general mussel description.

CURRENT THREATS:
Other current threats to freshwater mussels are well documented in the general mussel description.

CONSERVATION MEASURES:

Exposure Scenario Summary Table for the Dromedary Pearlymussel

Species	Life Stage	Habitat Type	Exposure Route	Diet	Significant Interspecies Relationships
dromedary pearlymussel	glochidia	parasite	contact with water, diet	water (until encysted), fish body fluids (once encysted)	fantail darter banded darter tangerine darter logperch gilt darter black sculpin greenside darter snubnose darter blotchside logperch channel darter Roanoke darter
	juvenile / adult	sediment dweller	contact & ingestion of water, diet, sediment	filter feeder (bacteria, algae, detritus, sediment)	

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