

**ENVIRONMENTAL REVIEW OF FISH INTRODUCTIONS
PRIVATE POND APPLICATION**

Name and address of applicant Donald A. and Jan D. Lees
1328 Maurine Street
Billings, MT 59105
259-1349

Has the pond been approved for a private pond permit? Yes

Location:

County Yellowstone Township 1N Range 26E Section 14 SE1/4

Name of the drainage where the pond would be located Yellowstone River

Name(s) of fish species proposed for introduction Goldfish (Carassius auratus), koi (Cyprinus carpio)

Is this species legally present in the drainage? NO

Species of special concern present in the drainage Yellowstone cutthroat trout, sauger

RISKS:

Potential for impacts on genetic structure of existing fish populations? None X
Minor Major
Comments:

Impacts to any life stage of existing fish populations due to competition and/or predation? None Minor X Major
Comments:

As proposed, this pond is not expected to introduce goldfish or koi into public waters in the drainage. However, as with any outdoor pond, the unintentional or accidental release of fish is always possible.

Impacts to wild fish from the release of goldfish are unknown, but assumed minor in waters immediately adjacent. Goldfish are an exotic fish species. The impacts of non-native fish introductions are not always immediate and are rarely predictable. The potential for introducing diseases into the wild that can affect native species is a concern.

Goldfish have not been documented in public waters in the Yellowstone River basin, although they have been introduced into outdoor private ponds without permits for decades. Reproducing populations have been documented in private ponds in the Yellowstone River Valley. Goldfish have become established and are self-sustaining in the wild in other locations in the United States (see below), but impacts on other fish populations are largely unknown. However, establishment in cold water streams is unlikely.

Koi are an exotic form of carp. Carp introductions, both intentional and inadvertent, into public waters have drastically altered pre-existing fisheries.

Impacts to other forms of aquatic life that may be caused by this introduction?None

Minor Major

Comments:

The location and size of this pond should not result in the introduction of goldfish into nearby streams.

It should be recognized that goldfish or any other species introduced in close proximity to public waters would likely have access to those waters by some means. Possible transfer mechanisms include unintentional introduction by humans, relocation by birds or other wildlife, and intentional transport by humans.

Should an unlikely but accidental or intentional introduction occur, the impacts to other aquatic life are largely unknown. Goldfish are an exotic fish species. The impacts of non-native fish introductions are not always immediate and are rarely predictable. The introduction of exotic diseases is always a concern.

Goldfish have not been documented in public waters in the Yellowstone River Basin, although they have been introduced and are reproducing in some private ponds. Goldfish have become established and are self-sustaining in the wild in other locations in the United States (below). Impacts to other aquatic life in these areas are poorly understood. Establishment in cold water streams is considered unlikely.

Koi are an exotic form of carp. Carp introductions, both intentional and inadvertent, into public waters have drastically altered pre-existing fisheries.

Potential for the proposed new species to reproduce in this location?None

Minor Major

Comments:

For goldfish, reproduction may occur in the pond when water temperatures exceed 70 degrees F. Reproduction is not likely in cold water stream environments. Reproduction is possible in downstream reservoirs and river backwaters.

For koi, reproduction is likely in all surrounding aquatic environments.

If necessary, would it be feasible to remove this species after it has been stocked?

Yes - from pond by chemical means if necessary.

Would this introduction result in impacts that are individually limited, but cumulatively considerable?

Unknown for goldfish. Risk exists to other water bodies in the Yellowstone Watershed, particularly backwater areas and downstream reservoirs. These environments provide habitat with warmer summer water temperatures and may offer a better opportunity for reproduction.

The following excerpts paraphrase Fuller et al. (1999):

Goldfish are established or have been reported in the wild in all states except Alaska. Self-sustaining populations have been confirmed in 16 states, including Idaho, Oregon, Michigan, Delaware, Maryland, Massachusetts, New Hampshire, New York, and Rhode Island. Goldfish are widely distributed in the Great Lakes Basin (Bailey and Smith 1981). Most of the largest established populations in the United States are noted in the vicinity of western Lake Erie and in central California.

Little is known about the ecology of goldfish in the wild. It is generally not regarded as a "pest species". Laird and Page (1996) concluded that goldfish in Illinois appear unable to compete with native fishes and have only become established in severely disturbed areas. However, goldfish probably compete with native fishes in some regions and, similar to carp, large populations could disturb sportfish habitats (Moyle 1976). Species believed to be impacted by wild goldfish populations include Sacramento sucker in California (Moyle 1976) and Pahrump poolfish in Nevada (Deacon et al. 1964).

Based on a series of artificial pond experiments and observation of a feral population, Richardson et al. (1996) found that goldfish are benthic invertivores whose behavior often results in visible increases in turbidity and decreases in aquatic vegetation.

Although the brightly colored forms often sold as ornamental fishes are occasionally found in U.S. waters, the surviving progeny of these individuals are typically the natural, cryptic olive-green coloration. Individuals in Utah are capable of growing to a large size (2-3 lbs.) in the wild (Brad Schmitz, MFWP, personal communication). In nature, goldfish often hybridize with carp, producing fertile offspring.

For koi, escape to and subsequent reproduction within the surrounding drainages will add to the existing, well-established carp populations.

Describe reasonable and prudent alternatives to this action, if any (including no action).

Require removal of goldfish and koi, and require stocking of other fish species.

Approval as proposed. If allowed, it is recommended that outdoor stocking of goldfish (and in this case, koi) only be allowed in closed-basin ponds (those with no inlet or outlet) that are outside the 100 year floodplain of any public water body (or a minimum of 200 yards from any surface water if no floodplain is delineated). The pond involved generally meets these specifications.

This pond has held goldfish and koi for many years. The pond owners were unaware that a private pond license was needed for a small backyard pond, and immediately attempted to comply with the law. Until the Department completes a programmatic assessment of koi that demonstrates impacts unique from common carp, the resident koi should be allowed to remain, but not be replaced once they die. If koi impacts are deemed insignificant, they could then be replaced.

Describe and evaluate mitigation, stipulations, or other control measures enforceable by the agency, if any.

Screening inlet and outlet.

Current laws regarding the transfer of live fish from one water body to another prohibit the intentional movement of fish planted in this pond to other waters.

Ponds with exotic species such as goldfish should be no larger than 10 feet by 20 feet in surface area to minimize the potential to attract birds or other wildlife that could relocate fish from the pond. Goldfish ponds are basically outdoor aquariums that are associated with residences and should be located within 50 yards of a house but more than 200 yards from the nearest surface water. All ponds may act as attractive nuisances for wildlife that can result in the inadvertent transfer of fish to state waters.

The use of koi in outdoor ponds will be addressed programmaticaly. Particular caution should be use in allowing their introduction near waters absent of carp.

List any other agencies or individuals that may be affected by the proposed introduction:

None

List all agencies and individuals who have been notified of this proposed introduction:

Harvey Nyberg, Regional Supervisor
Dennis Hagenston, Warden Captain
Bryan Goalie, Warden
DNRC Water Rights

Based on this evaluation, is an EIS required? No. If no, explain why the EA is the appropriate level of analysis for the proposed action.

As proposed, this pond will not result in the introduction of goldfish or koi into nearby public waters. The accidental release of goldfish into the wild is expected to result in minor

impacts, if any. The escape of koi into the Yellowstone Drainage would add to the existing carp population. No significant impacts were identified in this analysis.

Literature Cited:

Bailey, R.M. and G.R. Smith. 1981. Origin and geography of the fish fauna of the Laurentian Great Lakes basin. *Canadian Journal of Fisheries and Aquatic Science* 38:1539-1561.

Deacon, J.E., C. Hubbs and B.J. Zahuranec. 1964. Some effects of introduced fishes on the native fish fauna of southern Nevada. *Copeia* 1964(2):384-388.

Fuller, P.L., L.G. Nico and J.D. Williams. 1999. Nonindigenous fishes introduced into waters of the United States. *American Fisheries Society Publication* 27, Bethesda, Maryland.

Laird, C.A. and L.M. Page. 1996. Non-native fishes inhabiting the streams and lakes of Illinois. *Illinois Natural History Survey Bulletin* 35(1):1-51.

Moyle, P.B. 1976. *Inland fishes of California*. University of California Press, Berkeley.

Richardson, M.J., F.G. Whoriskey and L.H. Roy. 1995. Turbidity generation and biological impacts of an exotic fish *Carassius auratus*, introduced into shallow seasonally anoxic ponds. *Journal of Fish Biology* 47:576-585.

EA prepared by: Jim Darling, Fisheries Manager

Comments will be accepted until August 31, 2000

Comments should be sent to: Jim Darling
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