

CITIZEN-PROPOSED ISSUE PAPER

Date: 12/10/14

ISSUE: De-regulation of Asian Water Buffalo (*Bubalus bubalis*)

DISCUSSION (FACTS AND FIGURES, EXPLANATION OF ISSUE):

Pursuant to subsection 24-4-103(7), C.R.S., please consider my request to remove the Asian Water Buffalo from the list of regulated species in Colorado which necessitates acquisition, maintenance, and renewal of zoo licensing. Current Colorado regulation groups the Asian Water Buffalo and the African Water Buffalo into the same category. The African Water Buffalo is an aggressive and dangerous species which warrants regulation. However, the Asian water buffalo has been domesticated for over 5000 years and is used extensively in other countries as a primary dairy and meat source and as a beast of burden.^{a,b}

As of 2012, Colorado was rank 15th in the nation for dairy production, and showed the greatest increase (7.1%) in dairy production nationwide.^c As a dairy and meat animal, the Asian water buffalo will contribute to the agricultural economic production in Colorado. The primary product obtained from Asian water buffalo is milk used for production of mozzarella cheese (*mozzarella di bufala*), a gourmet form of mozzarella widely preferred to that produced from “cow’s” (*Bos sp.*) milk.

I request that the Asian Water Buffalo be removed from the regulated species list and that it should be regulated the same as dairy cattle. Thank you.

1. *The scientific and common name or names including subspecies.*

- a. Common name: Asian Water Buffalo^b
 - i. River
 - ii. Swamp
 - iii. Mediterranean
- b. Scientific name: *Bubalus bubalis*
 - i. Sub-species: numerous
- c. Not to be confused with the African Cape Water Buffalo of an unrelated genus and species: *Syncerus caffer*

2. *Habitat requirements and limitations, including an assessment of its survivability in Colorado's native habitats.*

Water Buffalo exist in a wide variety of ecologies from Nepal to Vietnam, India and Italy; from sea-level to high mountain elevations. They have been exported to and survive on every continent (except Antarctica). Colorado's grasslands and pastures are equivalent to their native environments from prairies to mountains.

3. *The potential of the species to negatively impact or destroy native vegetation*

Water buffalo are ruminants and eat primarily vegetation. They are less discriminating than cattle and will eat aquatic vegetation including sedges and reeds. Water buffalo were imported by the state of Florida in the 1970's to help control noxious aquatic weeds such as water hyacinth and water lettuce. Their potential to negatively impact native vegetation is equivalent to cattle.

4. *All known associated diseases, including zoonotic diseases and parasites*

Asian water buffalo are subject to the same diseases and parasites as domestic cattle, and are subject to the same tests, diagnostics, and treatments.^b The most common and concerning diseases they are prone to include Tuberculosis (TB) (*mycobacterium bovis*) and Brucellosis (*Brucella abortus*). Exotic diseases include rinderpest, foot and mouth disease, and vesicular stomatitis. Parasites include lice, mites, ticks, and gastrointestinal parasites (ie. GI worms). All imported animals are quarantined, tested, and treated or culled prior to entering into the United States; therefore, current extant herds in the U.S. are free of all

exotic diseases, TB, and Brucellosis. GI parasites are transmissible to and from *Bos sp.* and can be treated with the same anthelmintics.

5. *Predatory behavior, including assessment of the anticipated effect predation by the species would have on native wildlife and domestic animals.*

Asian water buffalo are vegetarian--grazing and browsing—and do not prey upon non-vegetative species. Regards predation on water buffalo, newborn calves would be at risk from predators such as coyotes, wolves, and mountain lions; however mature animals are likely too large for these predators to attack.

6. *An assessment of the potential of the species to damage or destroy agricultural crops or rangeland*

If left at large or escaped from pen, paddock, or pasture, the individual animal could potentially cause minor damage to cropland by grazing or walking on and crushing row crops. Obviously, damage would be increased if numerous animals escaped; identical to the threat dairy cattle herds pose to potentially damage or destroy croplands. Regards rangeland, if the animals are not left out to over-graze, there would be minimal to no damage to rangeland.

7. *An assessment of the ability of the species to breed with native wildlife and domestic animals*

Bubalus bubalis is a distinct species which is unable and unwilling to cross breed with non-*bubalus* species. Even with artificial reproductive techniques such as artificial insemination and embryo transfer, *Bubalus sp.* do not conceive or bare live offspring from *Bos sp.* or *Bison bison* (American Buffalo).^e

8. *Fecundity and reproductive behavior*

Reproductive maturity occurs late in the Asian Water Buffalo compared to *Bos sp.*—at approximately 2-3 years. Gestation is approximately 10 months. Cows deliver a single calf yearly and have an average domestic lifespan of about 20 years.^d Water buffalo have an “inherent lower fertility” than dairy cows.^e

9. *Assessment of the competition this species would have with native wildlife and domestic animals for food, water, and space.*

Asian water buffalo would occupy the same niche as dairy cattle. They would consume the same type and quantity of hay or pasture.

10. *Information about the regulatory status of the species in Arizona, Nevada, Utah, Wyoming, Nebraska, Kansas, Oklahoma, New Mexico, Idaho, and Montana. The Division will maintain a file of the appropriate regulations from these states and make them available upon request.*

Compiled by Chris Kloster, 10/2014:

Arizona -Regulated by AZ Game & Fish Department; Possession unrestricted

Nevada-Regulated by NV Dept of Wildlife; Possession requires license.

Utah-Regulated by UT Department of Agriculture and Food

Wyoming-Regulated by WY Game & Fish Department; Possession considered on an individual basis thru permit application

Nebraska-Regulated by NE Game & Parks; Importation allowed with permit; No license required

Kansas -Unregulated species

Oklahoma-Regulated by OK Department of Wildlife Conservation; Defined as exotic wildlife; exempt from licensing

New Mexico-Regulated by New Mexico Livestock Board; Defined as livestock

Idaho-Regulated by ID Dept of Agriculture; Defined as domestic livestock

Montana-Regulated by MT Department of Livestock

11. Assessment of the "weediness" of the animal. The "weediness" of an animal shall be defined and assessed by the following criteria:

1) *Characterization of the aggressiveness of the animal,*

Behavior and aggression of Asian Water Buffalo is similar to bovidae (dairy or beef cattle). The more human exposure and handling, the more docile they are. Daily milking and exposure to humans results in extremely docile and malleable animals. Bulls, too, can be very amenable, and when intensively managed, do not become even as dangerous or aggressive as dairy bulls.

2) *Its ability to thrive in disturbed habitats,*

In the mid-1800's, Asian Water Buffalo were intentionally introduced into Australia and then unintentionally abandoned. Over the next 200 years they were able to survive and then thrive in the marshy wetlands. By 1976 they had become a nuisance and eradication programs commenced. Today, the wild herds are maintained for their much desired prize hunting, and the aboriginals have re-domesticated some for use as food and leather.^d

3) *Its ability to disperse widely or pioneer,*

As exemplified in Australia, abandoned herds were able to survive and adapt to the environment of the Northern Territory which is a wetland of marshes, swamps, and coastal eddies. The animals require water for wallowing, and in dry years the animals could not survive and the herds self-culled.^d

4) *its reproductive potential, and*

Reproductive maturity occurs late in the Asian Water Buffalo at approximately 2-3 years. Gestation is approximately 10 months. Cows deliver a single calf yearly and have an average domestic lifespan of about 20 years.^d They do not cross-breed with any North American species.^e

5) *its ability to adapt to other food sources (opportunistic feeding ability)*

Asian Water Buffalo do forage for any palatable grasses or grass-like plants such as reeds and sedges.^d

12. *Bibliography of reference materials.*

- a. American Water Buffalo Association:
<http://americanwaterbuffaloassociation.com/Water%20Buffalo%20Fact.htm>
- b. Thomas CS. DeLaval. Efficient dairy buffalo production. 2008
- c. USDA Federal Milk Market Administrator
<http://www.fmmacentral.com/PDFdata/msb201302.pdf>
- d. The Feral Water Buffalo (Bubalus Bubalis). Department of Sustainability, Environment, Water, Population and Communities.
<http://www.environment.gov.au/system/files/resources/b4a187ba-7a72-4ed2-ab06-7a8b8a1b87a0/files/buffalo.pdf>
- e. Drost M. Advanced Reproductive Technology in the Water Buffalo. Theriogenology, 2007. 68:450-453

13. Assessment of the danger this animal poses to human if it were to escape.

The Asian Water Buffalo presents the same danger to persons when escaped as do cattle (dairy or beef) when they are at large. In addition, the Asian Water Buffalo is more wary of strange persons than cattle are and move away to escape. When cornered and threatened, they may resort to charging persons as would beef or dairy bulls.

Thank you for taking time to review my request to remove the Asian Water Buffalo (*Bubalus bubalis*) from the regulated species list of Colorado. In summary, the species is well domesticated and used for dairy and meat purposes in almost every country in the world. Several Water Buffalo dairies are currently in operation in Canada, New Hampshire, Vermont, North Carolina, Minnesota, and Wisconsin. As Colorado is experiencing a popularity for dairy production—increasing number and size of dairies moving into the state and a new commercial cheese production factory (Greeley, CO)—it seems logical to deregulate this valuable dairy species to facilitate private and commercial production of cheese, milk, meat and leather to support and promote Ag business in Colorado. The species presents no greater concern for human, wildlife or environmental welfare than do the *Bos* spp. (dairy or beef cattle).

WHO MIGHT BE INTERESTED IN THIS ISSUE? HAVE YOU COMMUNICATED WITH ANY OTHER INTERESTED PARTIES? WHAT INPUT HAVE YOU RECEIVED?

Colorado State Penitentiary Juniper Valley Water Buffalo Dairy (Will McConnell), Local cheese artisans, and local private persons all have an interest in deregulation of *B. bubalis*. I have contacted persons from each category and all are very interested in having greater access and less regulation of this dairy breed.

ALTERNATIVES: PLEASE INDICATE THE PROBABLE OUTCOME IF THIS PETITION IS ACCEPTED, AS WELL AS THE IMPACT OF ALTERNATIVES TO THIS PETITION:

Small herds of water buffalo or possession of individual cows may develop in Colorado for personal and artisan production of milk, mozzarella, and meat. De-regulation will contribute to the growing dairy agricultural commerce in Colorado.

PETITION PROPOSED BY:

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PETITION WRITTEN BY:

Richard Wheeler, DVM, DACT

DATE SENT TO THE COMMISSION:

Original: 10/1/14

Resent as "Citizen-Proposed Issue": 12/10/14