

Appendix 2: Fort Riley Memo

Letter from the Garrison Command at Fort Riley regarding development plans on post and its impact on flooding on Wildcat Creek

The watershed of Wildcat Creek on Fort Riley encompasses approximately 21,800 acres, and is composed of high upland prairies, alluvial bottomland flood plains, and broken and hilly transition zones. Grasslands comprise over 80% of the watershed on Fort Riley, and consist of two basic types; native prairie and “go-back” areas with the go-back grasslands being areas that were formerly cultivated for crop production and were subsequently allowed to return to grassland. Past land use activities and ongoing military training have produced grasslands that exhibit a less than pristine species composition, and that have been invaded by woody species. Shrubs are located along in the grasslands along the edges of woodlands, in isolated patches along intermittent drainages and ravines, and scattered throughout grassland fields. Scattered individual trees and patches of trees have become established throughout the grassland fields. The alluvial bottomlands and transition zones contain leased crop fields (520 acres) that provide firebreak protection and bur oak woodlands (approximately 2,500 acres).

The overall habitat management strategy within the Wildcat Creek watershed on Fort Riley is to protect, propagate, and conserve the native tallgrass prairie where it occurs, and the fauna species associated with it, and to reverse woody plants’ encroachment into the grasslands that has occurred. Most trees and substantial quantities of shrubs within grassland fields will be eliminated. It is anticipated that the overall spatial extent of wooded areas in these fields will be reduced by 15%, with almost the entire decrease being due to reduction of spatial extent of the invasive shrubs.

Native prairie evolved under the influences of fire and grazing, and these or similar disturbances are required to maintain the grasslands. Fort Riley integrates habitat management actions, including prescribed burning, hayfield cutting, mechanical tree and brush control, herbicide application and land rehabilitation to sustain the training mission, enhance Soldier safety, maintain, enhance or reclaim native prairie, control undesirable invasive plants, and provide suitable habitat for the native fauna typically associated with tallgrass prairie. Fire is especially effective in retarding the spread of woody vegetation into the prairie. Prescribed burns are conducted from approximately September 1 through April 30 annually, with the objective that every grassland area will burn at least 2 out of every 5 years. Management actions focus on juxtaposition of varying time since the vegetation’s last disturbance treatment to create more heterogeneous habitat conditions within the grasslands.

Generally, in grasslands with a minor shrubby component, prescribed burning is the only management tool used. In grasslands with a moderate shrubby component, prescribed burning, rotary mowing and chemical treatment are used. In grasslands with an extensive shrubby component, scattered trees or both, prescribed burning, various mechanical controls, and chemical control are used to combat woody encroachment. Approximately 6,900 grassland acres within the watershed on Fort Riley are leased for hay harvest. Hay-cutting is timed to reduce detrimental effects on breeding birds, provide adequate forage quality, provide adequate re-growth, and interrupt the development of viable noxious weed seed.

Large, warm-season grasslands are mowed on a rotational system with some subunits left idle in each year rather than annually cut for hay. Warm season grasses may be cut during the period of July 15 to August 15 each year.

The management objective in the watershed’s woodlands is to develop, maintain, and enhance open oak woodland and create a ground cover with forbs, grasses, and oak sprouts. The prairie and woodland ecotone is maintained through the use of periodic prescribed fire, encouraging oak and other shade intolerant species. Prescribed burning, timber stand improvement and commercial harvest actions are integrated to sustain the training mission, promote Soldier safety, provide improved forest stand health, and achieve the desired end-state forest conditions.

The firebreak crop fields are grown and harvested by contracted producers (lessees). These crops are managed in a manner that provides for year-round fire protection, does not unduly expose the leasehold to erosion or infestation with noxious weeds, provides wintertime food for wildlife, provides reasonable opportunity for profit by lessees, and increases the biodiversity of the installation. Under normal circumstances, alfalfa or cereal grain is planted in no more than one-half of the width of the firebreak.

The remaining firebreak is planted to row crops such as grain sorghum, corn, soybeans, or sunflowers and is not left fallow. No-till farming is generally not considered an acceptable practice for firebreak fields and is allowed only on a case by case basis. In areas where the soil is not arable because of severe slopes or rocky conditions, a crawler tractor-pulled plow accomplishes the tillage. The firebreak varies in width from approximately 150 feet to more than 300 feet.

Topeka shiners have been found on Fort Riley in Wildcat Creek and its tributaries Silver, Honey, Wind and Little Arkansas creeks. The Topeka shiner typically occurs in streams with high water quality. Streams containing Topeka shiners are relatively undisturbed, with minimal streambed disturbances. The streams have not been impounded or channelized and usually do not drain areas subject to high silt loads in water runoff. Mainstem reservoir developments and tributary impoundments have adversely impacted the species. Topeka shiner populations have been eliminated from streams both above and below dams following the construction of stream impoundments. Impoundments have several negative impacts. The dams eliminate the scouring floods that create pool habitat downstream and maintain a rocky, silt-free substrate. Upstream habitat may be converted to deep, open water habitat behind the dam. Predatory fish move upstream and downstream from the impoundment where they pose a predatory threat to Topeka shiners that did not naturally exist.

To manage Topeka shiners, Fort Riley controls construction of water impounding structures within the Wildcat Creek watershed, and consults with the U.S. Fish & Wildlife Service regarding any planned action that would affect Wildcat Creek or its tributaries. Fort Riley also prevents degradation of streams within the watershed. All streams are protected from adverse impacts. Adverse impacts include activities that result in channel destruction or alteration, increase water turbidity or eutrophication, or destroy vegetation filter strips. Specifically, the following activities are controlled within 50 feet on either side of the streams: construction, operations and maintenance activities, demolition, operation of vehicles, timber harvest, detonation of explosives, and certain recreational pursuits. Little development has occurred within the watershed on Fort Riley. There are 25.3 miles of asphalt/paved roads, and 36.6 miles of gravel roads. Three rock quarry sites totaling 50 acres are also present. Developed, shallow-water wetlands occupy 25 acres.

Currently, one facility is under construction in the watershed – an Infantry Squad Battle Course having an estimated construction completion date of August 2012. The Kansas City District Corps of Engineers (KCD) is supervising and administering a contract to construct the Course, which includes approximately 3,700 gross square feet of various support structures (classroom, covered mess area, latrine, bleacher enclosure, ammo breakdown, and control tower), impervious pavement sidewalks and aggregate paved parking areas and vehicle lanes. The KCD's design of the project incorporates Low Impact Development techniques (e.g. aggregate paving, open channels, low water crossings, etc) and located improvements away from existing creeks and tributaries so that it will not increase the amount of storm water runoff generated from the site. Storm water is being strictly controlled during construction in accordance with a KDHE-approved Storm Water Pollution Prevention Plan that includes minimal disturbance of the site to ensure the natural hydrology and water quality features that currently exist on site can remain in place and fully functional during and after construction.

Any future construction having a footprint exceeding 5,000 square feet in the watershed on Fort Riley will meet the requirements of Section 438, Storm Water Runoff Requirements for Federal Development Projects, of the 2007 Energy and Independence Security Act (EISA).

Section 438 requires the sponsor of any development or redevelopment project involving a Federal facility with a footprint that exceeds 5,000 square feet to use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of storm water flow.

Additionally, the Office of the Assistant Secretary of the Army, Installations and Environment, requires the installation to incorporate Low Impact Development (LID) criteria as a means to manage storm water on all projects. It further states, the LID features must be designed in accordance with EPA 841-B-09-001, Technical Guidance on Implementing Storm water Runoff Requirements for Federal Projects Under Section 438 of the EISA, and all master planning, project development and project site planning will maximize the use of the existing topography including slope, hydrology, flora and soils, and minimize site clearing and soil grubbing activities to the greatest extent possible.

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