

DEPARTMENT OF THE ARMY PERMIT

Permittee: **Nebraska Game and Parks Commission**

Permit No: **NE 197925002, Amendment #5, General Permit 79-02**

Issuing Office: **Omaha District, Corps of Engineers**

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

Construct eleven fish habitat structure designs. (See pages 5 and 6 for a detailed project description.)

Project Location:

Rivers and streams designated as waters of the United States within the State of Nebraska

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **October 31, 2010**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

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EDITION OF SEP 82 IS OBSOLETE.

(33 CFR 320-330)

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and

forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

See page 4.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

() Section 10 of the River and Harbors Act of 1899 (33 U.S.C. 403).

() Section 404 of the Clean Water Act (33 U.S.C. 1344).

() Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, tribal, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Caren Mcell
(PERMITTEE)

11-7-05
(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

JEFFREY A. BEDEY
COLONEL, CORPS OF ENGINEERS
(DISTRICT ENGINEER)

By: Russell W. Rochford (DATE) 14 Nov. 2005
Russell W. Rochford
Chief, Regulatory Branch

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEEE)

(DATE)

SPECIAL CONDITIONS

1. After a detailed and careful review of all of the conditions contained in this permit, the Permittee does acknowledge that, although said conditions were required by the Corps of Engineers, nonetheless, the Permittee agreed to those conditions voluntarily to facilitate issuance of the permit and the Permittee will comply fully with all the terms of the permit conditions.
2. The Permittee shall notify the Kearney Regulatory Office when work on the project commences and immediately upon project completion.
3. No work under General Permit 79-02 may occur in a Wild and Scenic River unless the National Park Service has determined in writing that the particular activity will not affect the Wild and Scenic River designation or study status.
4. Any work in a Section 10 waterway will be coordinated with the appropriate Corps of Engineers project office.
5. All areas disturbed by construction will be revegetated to native perennial grasses and forbs.

Detailed Project Description

1. MAJOR WING DIKE (Figure 1)

Trenches are excavated into the bank at least three feet. The log frame is constructed with utility poles and held in place with large nails or spikes, #9 soft, galvanized wire, 5/16" cable and steel anchor posts. The top of the frame will clear the water at least 6" at low water level. The frame and trenches are then filled in with large pieces of concrete or rock until even with water level. The holes between the rocks and the frame are plugged first with smaller pieces of concrete and then with gravel to prevent water from flowing through the structure. More gravel is added until the fill is within two inches of the top of the frame. A layer of topsoil is added and then revegetated with native species.

2. MINOR WING DIKES (Figure 2)

Trenches are excavated into the bank at least three feet. A log or plank frame is constructed at a 45-degree angle to the bank and held in place with #9 soft wire, 5/16" cable and steel posts. The adjacent stream banks may be armored to stop erosion. The width and depth of the structure may vary depending on channel flows and velocity. Monitoring will be necessary.

3. BANK PROTECTION DEVICES (Figure 3)

A retaining wall is first constructed from logs or poles and backfilled with rock &/or gravel. Tree trunks are then cabled to the bank so that they lay over the wall or rest in front of it. An alternative measure is to build a series of plank deflectors along the wall to prevent erosion of the retaining wall. The front of the wall and the base of the deflectors are lined with rock, which are then covered with substrate from the streambed.

4. DIGGER LOG (Figure 4)

Trenches are excavated into the bank at least three feet. Steel posts are driven into the streambed at appropriate sites. Logs are then placed in the trenches and attached to the post with wire and cable. Width and depth of the structure should be monitored so as to prevent excessive sand and debris buildup and erosion of anchor post positions. The trenches are backfilled with concrete chunks or riprap, gravel and soil and revegetated with native species.

5. TREE STRUCTURES (Figure 5)

Trees are cabled to steel posts driven into the top bank. The trees are allowed to hang over the bank into the water, thus providing cover for underwater organisms.

6. BANK COVER DEVICE (Figure 6)

Horizontal poles are anchored into place and backfilled with rock and gravel. The plank stringers are laid in place and reinforced with rock and gravel. The longitudinal planking are anchored and page fence is nailed to the planking. The whole structure is beneath the water level. Rock is placed on top of the fencing with the spaces between them filled with smaller rocks and gravel. Topsoil is placed over the structure and revegetated with native species.

7. LUNKERS (Figure 7)

A lunker is a large wooden box (8' x 2') with both ends and the stream side open. Three wooden stringers extend across the box and two feet into the bank. Nine lengths of 6' rebar are driven through the lunker box and stringers into the streambed. An 8' blocking board extends across the top of the lunker to retain riprap over the lunker box. Riprap, covered with topsoil, is placed above the structure and the area is

seeded to native species.

8. WEDGE DAM (Figure 8)

Two main logs of the dam face upstream at a 45-degree angle to the stream flow with the two brace logs pinned to the main logs at about a 90-degree angle. Butts of the two main logs extend into the stream bank 3-6', depending on the stability of the bank. A 6-12" drop along the top of the log from the bank to the apex is desirable. This is usually achieved through log taper and by digging the trench deeper at the apex than at the bank. Dig the main logs into the stream bottom as deeply as possible. Logs should be as large as possible; select logs at least 10-12" in diameter for streams less than 10' wide and 14-16" in larger streams.

Once the logs are in place, staple hogwire or other heavy wire to the upper side of the log. Then place hardware cloth on top. The cloth seals the structure and the heavy wire provides strength to hold the fill material in place. Put a layer of large flat rocks on the wire. Add a layer of gravel and the another large rock on the gravel. If preferred, nail 4-6' boards to the upper side of the dam log in lieu of wire. Fill the cribs at the bank with a mixture of large rock or concrete chunks, gravel and dirt. Spillway height should be 6-12".

9. VEGETATION

Stream banks are graded back to a slope no steeper than 2(h):1(v). The areas will be seeded with the appropriate permanent, perennial native vegetation and maintained in this condition. Native shrubs and forbs can also be used.

10. BOULDERS (Figure 9)

Boulders are placed in groups or random arrangement. Minimum rock size depends upon maximum stream velocities at the site but generally two- to three-foot diameter or larger is utilized. They are generally placed in riffles and glides but can be placed in pools for added cover. Velocities are increased around the structure, scouring small pools and also providing in stream cover.

11. VORTEX ROCK WEIR (Figure 10)

Large footer rocks (two- to three-foot diameter depending on maximum stream velocities) are entrenched to secure the structure. The overall configuration is constructed in an upstream curve to redirect the stream flows to the center. Large rocks are wedged against the footer rocks on the upstream side with varying gaps and overall depth, deepening toward the center of the stream. Hard bank stabilization is necessary at the structure's junction to each bank to maintain high stream flows within the vortex structure. Anchored trees may be used to provide additional habitat.