It’s been 16 years since I shot my first duck down in the Deep Fork River bottoms. The spot was an old deepwater slough adjacent to the river and for a day or two prior to my hunt, I had been keeping a close eye on the growing number of greenheads using it.

I was elated because it was the first duck I’d ever harvested, and because it was my first effort at attempting to enhance habitat conditions on that same wetland the previous summer. Now the old slough was packed with mallards taking advantage of the smorgasbord of food present.

As an area manager for the Wildlife Department, it had been my first stab in working with wetland development and it had all added up to a very rewarding experience. The effort was actually quite straightforward. An old beaver dam present on a natural drainage outlet had controlled the level of the four foot deep slough.

The previous summer, we had removed the dam and replaced it with a small earthen plug and flashboard riser structure, providing a permanent structure to impound water and allow the capability to partially lower the level under controlled conditions. We implemented a slow, partial draw-down that same summer, exposing a wide area of mud normally inundated by water year-round.

Within two months, the results of such an artificial drawdown had created an explosion of grassy and weedy growth dominated by annual plants including smartweed, wild millet and sedge. By fall, these native “moist soil” plants had produced the abundance of seed so attractive to the mallards and other ducks observed using the slough later that fall.

Managing developed wetlands can be extremely rewarding, particularly when you are able to observe firsthand how quickly many species of migratory birds and resident wildlife can respond to newly-created habitat. By far, the most productive Oklahoma wetlands are those which go through at least one or more wet/dry cycles throughout any given year.

Shallow, seasonal wetlands begin to dry during the growing season. This allows native weedy and grassy plants to germinate and establish themselves so they can produce important food sources such as seeds, forage and tubers. The shallow water also warms quickly during late winter and early spring and produces an abundance of aquatic insects (invertebrates). These invertebrates provide an important and essential source of protein for migrating shorebirds and waterfowl, particularly hens preparing to head north and lay eggs on the breeding grounds.

Temporary and seasonal wetlands have incurred the greatest loss in our state and a great deal of emphasis in recent years have focused on restoring, enhancing and even creating these types of wetland habitats. However, it is essential to have properly designed structural measures in place for a landowner to effectively implement various management strategies for developed wetlands.

The primary goal is to maximize shallow water condition throughout the majority of the wetland and this is often accomplished with the construction of low-level dikes or levees. Although costly, a contour dike or series of contour dikes run at 6-12 foot intervals maximizes coverage of shallow water. Contour diking is often the most effective strategy for varying topography.

These shallow water depths are essential for waterfowl which tip up to feed on the bottom. When preferred foods are available, ducks and geese are particularly attracted to forage areas that are flooded in two to three inches of water and most shorebirds feed at similar depths while wading birds prefer slightly deeper water (four to seven inches).

Developing dike dimensions with a min-

![Full-Round Riser (Figure #4)](image)

Once complete, this full-round riser (shown in diagram above) will be partially surrounded by the dike. The design allows landowners to stay dry while manipulating water levels.
imum crown width of 10-12 ft. and 1:1 or 5:1 side slopes will help mini-
imize wave action damage, deter
narrowing animals such as beaver or
nuskrat and allow safe access on
slopes for mowing purposes. Low
level dikes are usually constructed at
a height of 1-1.5 feet above the max-
imum planned water level.

Low dikes in areas along rivers
and streams may submerge quickly
and uniformly and often receive less
famine than a large, protective
wetland if overtopped. A riprap-lined
emergency spillway may also be
necessary for structural integrity
where flooding is frequent.

Water control structures are a crit-
ical component of wetland develop-
ment projects. They control water
levels throughout the wetland and
also allow controlled drawdowns to
encourage native food growth while pro-
viding an appropriate discharge outlet for
excess water. The placement or loca-
tion and the type of structure used are two
important considerations. Several designs
have been used in recent years, however,
he most efficient types include structures
which allow precise manipulations of
water levels with minimal monitoring by
he landowner or manager.

These features are especially important
to implement successful moist soil man-
agement for growth of desirable native
moist soil plants. Flashboard riser struc-
tures typically provide these functions
because they are self-regulating and
lashboards as little as two inches tall
allow water levels to be fine-tuned.

One drawback to most types of flash-
board riser designs is their susceptibility to
beaver activity. Overnight, beavers can
often plug a half-round riser completely
full of debris, particularly if water is run-
ning through the structure. This
often requires labor-intensive work to
remove sticks and mud and is usually only
remedied by constructing hog panels
around the riser combined with methods
such as beaver trapping or night spotlight-
ing (permit required). An alternative
design that isn’t completely beaver-proof
but has proven to work well on many pub-
licly-managed ODWC wetland projects is
the full-round riser.

Ducks Unlimited engineers developed
this design a few years ago. The
modified flashboard riser is sur-
rrounded by backfill material inside
the front slope of the dike. The
design can muffle the sound of run-
ning water which is the attracting
cue for beavers.

A properly placed inlet is located
below the bottom of the impound-
ment, so beavers can not see it until
most of the water has been drawn
down. The design also allows easy
manipulation of stoplogs from the
bank without needing a set of
waders or a catwalk.

Tubular metal stoplogs with
welded studs can be easily removed
with a simple hooking tool made
specifically for the application. The
structures should be located at the
lowest elevation point of the
impoundment in most instances to ensure
effective drainage to accomplish manage-
ment strategies or repair work.

In the last newsletter, a summary was
given of the various agencies and organi-
izations that offer both financial aid and/or
technical assistance as they relate to cur-
rent wetland programs.

Your Side of the Fence

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Every issue is available by logging onto the
Oklahoma Department of Wildlife Conservation’s Web site:

www.wildlifedepartment.com