

CONTROLLING RUNOFF FROM FEEDLOTS AND COW/CALF WINTERING AREAS

+ FOCUS +

Livestock Options for the Future - June 27, 2001


CONTROLLING RUNOFF FROM FEEDLOTS AND COW/CALF WINTERING AREAS

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CONTROLLING RUNOFF FROM FEEDLOTS AND COW/CALF WINTERING AREAS

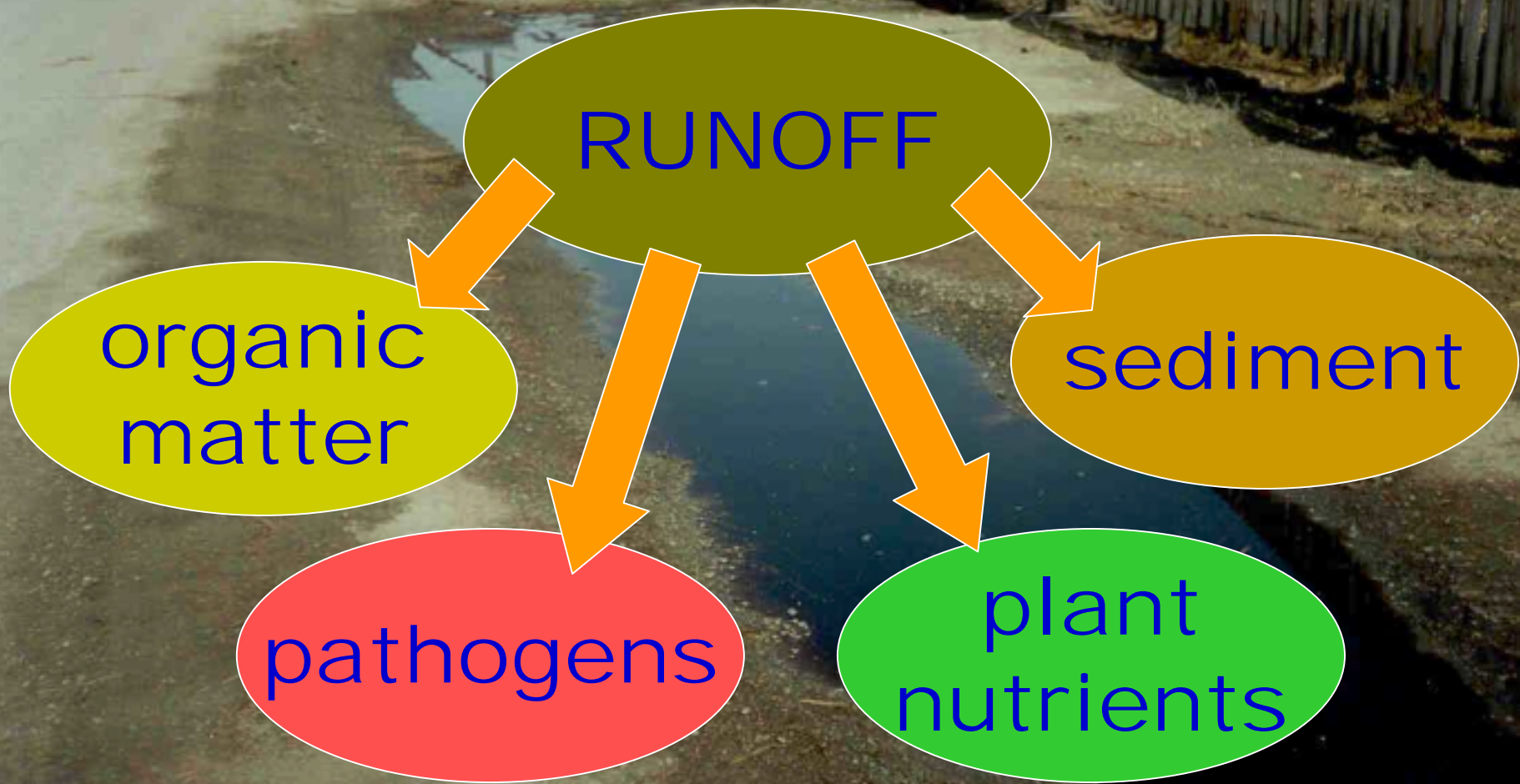
- WHY SHOULD I WORRY ABOUT RUNOFF?
- WHAT CAN I DO TO CONTROL RUNOFF?
- WHERE CAN I FIND MORE INFORMATION?

A close-up photograph of two brown bison with large, shaggy heads and horns, looking towards each other in a grassy field under a clear blue sky. A yellow speech bubble is overlaid on the image, containing text.

PSST MORTY!
WHY SHOULD I
WORRY ABOUT
RUNOFF?

“It’s only organic matter, no
different than rotting cattails.”

WHY SHOULD I WORRY ABOUT RUNOFF?



WHY SHOULD I WORRY ABOUT RUNOFF?

pathogens

WALKERTON

PUBLIC HEALTH CONCERNS

WHY SHOULD I WORRY ABOUT RUNOFF?

plant
nutrients

EUTROPHICATION

WHY SHOULD I WORRY ABOUT RUNOFF?

too much phosphorus



excessive algal growth



algae die off - reduces oxygen



low oxygen levels cause fish kills

EUTROPHICATION

WHY SHOULD I WORRY ABOUT RUNOFF?



silage
leachate

WHY SHOULD I WORRY ABOUT RUNOFF?



INCREASED PUBLIC AWARENESS

WHY SHOULD I WORRY ABOUT RUNOFF?



INCREASED PUBLIC AWARENESS

WHY SHOULD I WORRY ABOUT RUNOFF?



PROVINCIAL LEGISLATION

WHY SHOULD I WORRY ABOUT RUNOFF?



**The Livestock Manure and
Mortalities Management Reg.**

PROVINCIAL LEGISLATION

The Livestock Manure and Mortalities Management Regulation (part of THE ENVIRONMENT ACT)

- came into effect in early 1998
- replaced the Livestock Waste Reg.
- administered by MB Conservation
- SECTION 16 deals specifically with confined livestock areas

A photograph of two brown bison in a grassy field under a clear blue sky. A yellow speech bubble with a black border is positioned between them, containing text. The bison on the left is looking towards the right, and the bison on the right is looking towards the left.

PSST MORTY!
WHAT'S A CONFINED
LIVESTOCK AREA?

What is a CONFINED LIVESTOCK AREA?



DEFINED AS: "AN OUTDOOR, NON-GRAZING AREA WHERE LIVESTOCK ARE CONFINED BY FENCES OR OTHER STRUCTURES, OR TOPOGRAPHY, AND INCLUDES A FEED-LOT, Paddock, CORRAL, EXERCISE YARD AND HOLDING AREA."

The Livestock Manure and Mortalities Management Reg.



SUBSECTION 16(1) states:

“AN OPERATOR SHALL ENSURE THAT LIVESTOCK IN A CONFINED LIVESTOCK AREA OF AN AGRICULTURAL OPERATION DO NOT HAVE ACCESS TO SURFACE WATER.”

The Livestock Manure and Mortalities Management Reg.



SUBSECTION 16(2) states:

“NO PERSON SHALL OPERATE A CONFINED LIVESTOCK AREA IN SUCH A MANNER THAT CAUSES POLLUTION OF SURFACE WATER, GROUNDWATER OR SOIL.”

SUBSECTION 16(3):

ALL NEW* CONFINED
LIVESTOCK AREAS

minimum
separation
distance
of 100m
(328 ft)

SURFACE WATERCOURSE

WHAT CAN I DO TO CONTROL RUNOFF?

CONFINED LIVESTOCK AREA

RUNOFF

?

SURFACE WATERCOURSE



WHAT CAN I DO TO CONTROL RUNOFF?

CONFINED LIVESTOCK AREA

RUNOFF

RUNOFF
COLLECTION
BASIN

SURFACE WATERCOURSE

A photograph of two brown bison in a grassy field under a clear blue sky. A yellow speech bubble with a black border is positioned between them, containing text. The bison on the left is looking towards the right, and the one on the right is looking towards the left.

**PSST MORTY!
WHAT'S A RUNOFF
COLLECTION BASIN?**

RUNOFF COLLECTION BASIN



RUNOFF COLLECTION BASIN



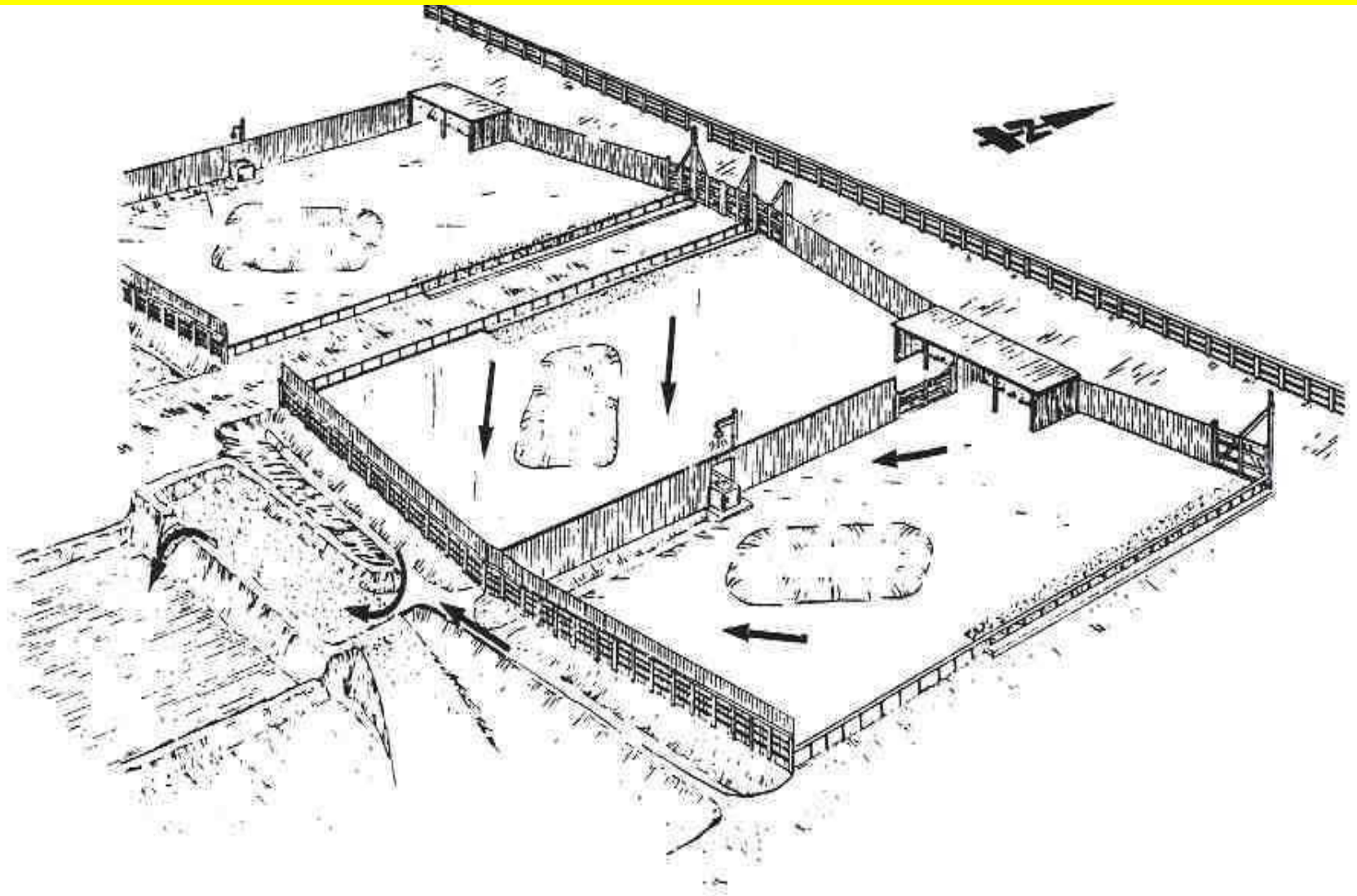
“RULE-OF-THUMB” (for Manitoba):

- IT SHOULD BE LARGE ENOUGH TO HOLD 3" OF RAINFALL FROM THE COLLECTION AREA (WITH MINIMUM 12" FREEBOARD).

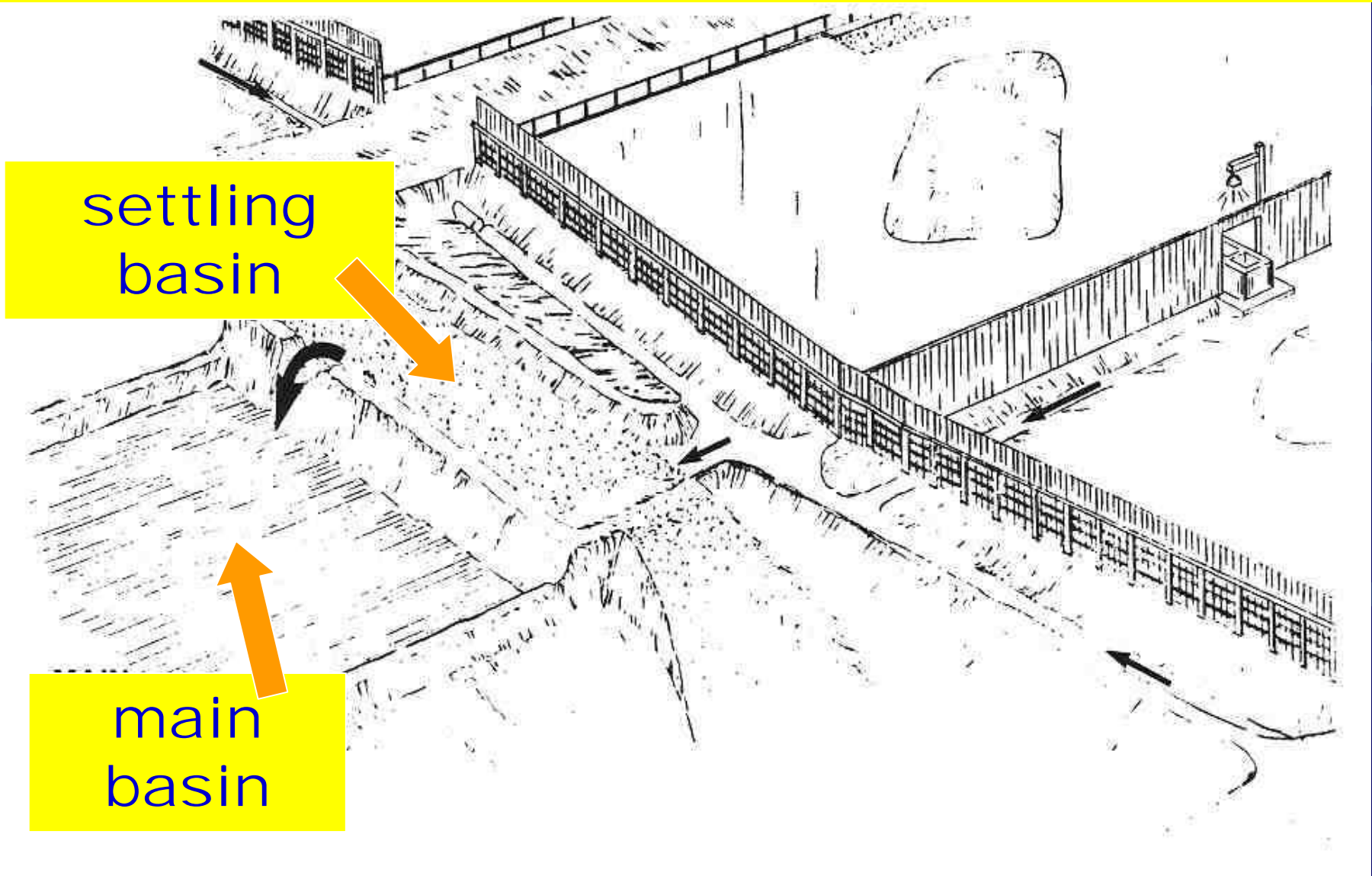
PREVENT "CLEAN" WATER FROM ENTERING THE CONFINED LIVESTOCK AREA



SLOPE ALL PENS SO THEY DRAIN TO THE RUNOFF COLLECTION BASIN



LARGER FACILITIES SHOULD CONSIDER INSTALLING A SOLIDS SETTLING BASIN



SOLIDS SETTLING BASIN



WHAT CAN I DO TO CONTROL RUNOFF?

CONFINED LIVESTOCK AREA

RUNOFF

RUNOFF
COLLECTION
BASIN

?

SURFACE WATERCOURSE



IRRIGATE IT
ONTO CROPLAND

The diagram features a dark blue background with several light blue, curved, wavy lines. A yellow arrow points upwards from a dark green box at the bottom to a light green box at the top. The light green box has a dotted pattern and contains the text 'IRRIGATE IT ONTO CROPLAND'. The dark green box contains the text 'RUNOFF COLLECTION BASIN'.

RUNOFF
COLLECTION
BASIN

**HOPE
THAT IT
EVAPORATES**

**RUNOFF
COLLECTION
BASIN**

RUNOFF
COLLECTION
BASIN

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graph TD; A[RUNOFF COLLECTION BASIN] --> B[TREAT IT BY WAY OF A CONSTRUCTED WETLAND]; B --> C[?]; C --> D[SURFACE WATERCOURSE];
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TREAT IT BY WAY OF A
CONSTRUCTED WETLAND

?

SURFACE WATERCOURSE

A photograph of two brown bison in a grassy field under a blue sky. A yellow speech bubble is overlaid on the image, containing text. The bison are facing each other, and the speech bubble is positioned between them.

**PSST MORTY!
WHAT'S A CONSTRUCTED
WETLAND?**

What is a CONSTRUCTED WETLAND?

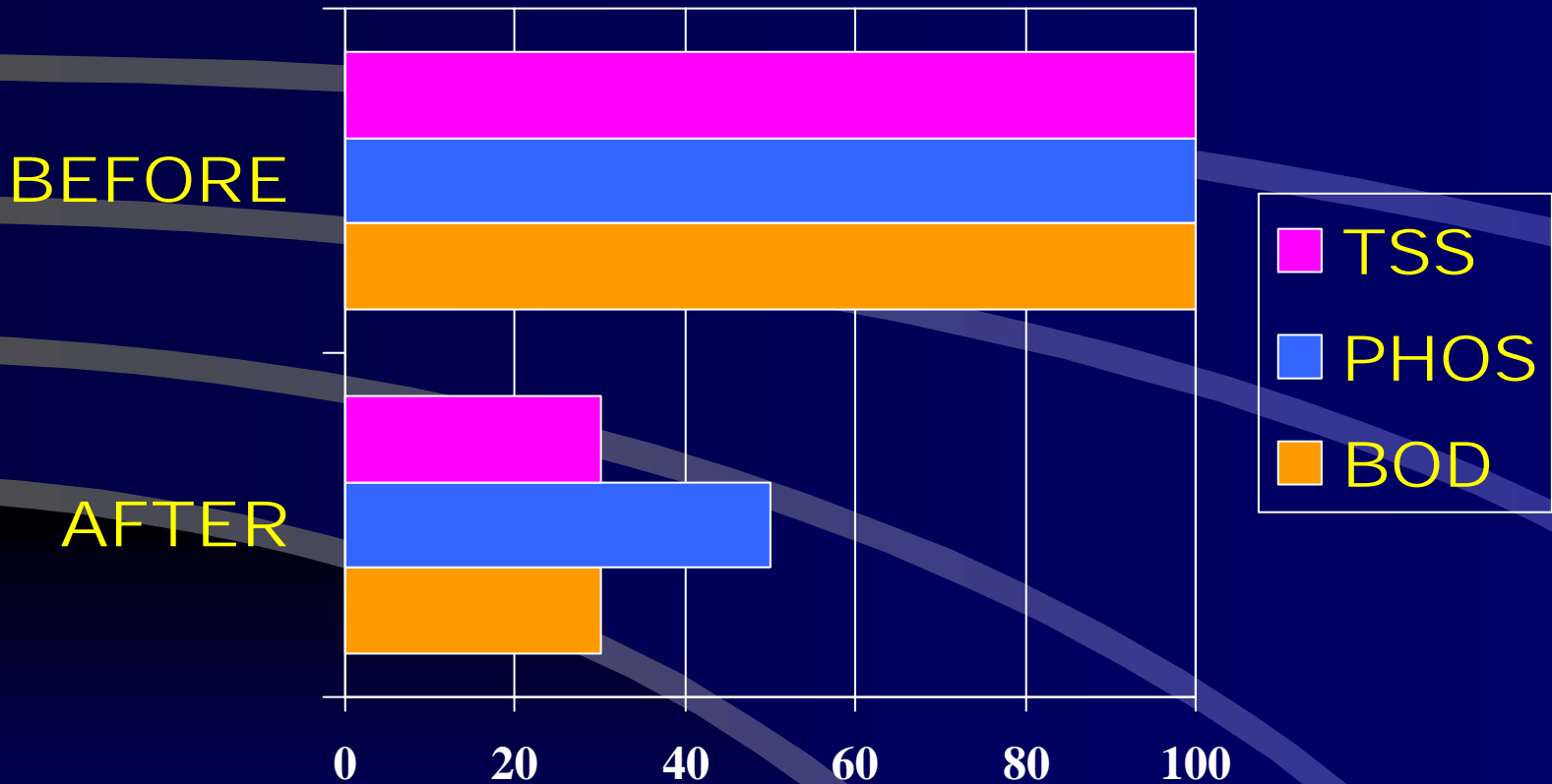


What is a CONSTRUCTED WETLAND?



PFRA

PERFORMANCE OF A CONSTRUCTED WETLAND

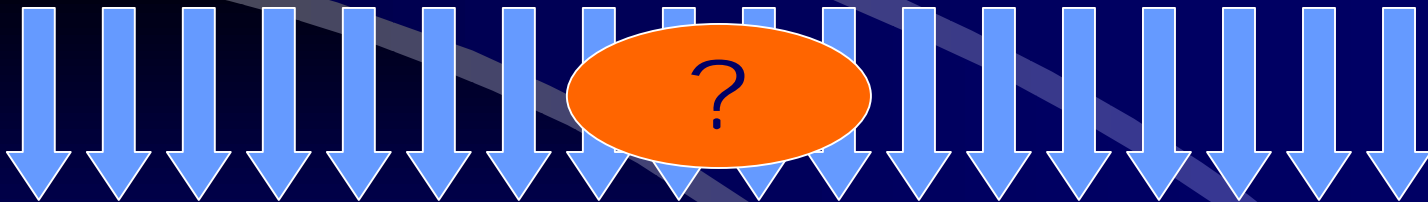


PFRA

RUNOFF
COLLECTION
BASIN



TREAT IT BY WAY OF A
VEGETATED FILTER STRIP



SURFACE WATERCOURSE



PSST MORTY!
WHAT'S A
VEGETATED
FILTER STRIP?

“A VEGETATED FILTER STRIP IS
A SYSTEM IN WHICH A VEGETATIVE
AREA IS USED FOR TREATING RUNOFF
BY INFILTRATION, DILUTION, FILTRATION
AND ADSORPTION OF POLLUTANTS.”

Which control strategy would you recommend here?



Where can I find more information on controlling runoff?

SUSTAINABLE AGRICULTURE
F A C

Controlling
Confined Liv

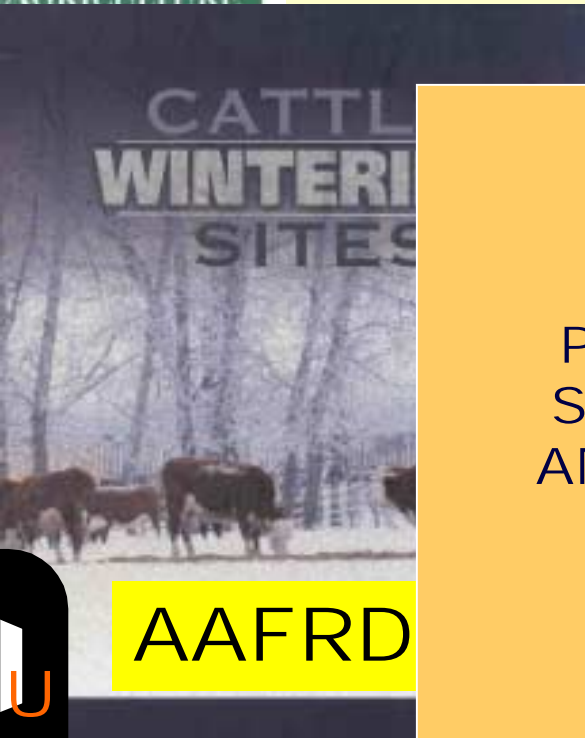


FIGURE 1:
A feeder in a confined
livestock area.

What is a "confined liv
estock area" (CLA)?

Why worry about runo
ff?

CATTLE
WINTERING
SITES



AAFRD

HOLDING
POND SITE
SELECTION
AND DESIGN

SAF

Beef
Guidelines

CONSTRUCTED
WETLANDS
FOR TREATING
FEEDLOT RUNOFF

PFRA

VFS/KSU



THE END

