

Region <u>WCR</u>	County <u>Dunn</u>	Report Date <u>3/1994</u>	Classification <u>LAL</u>
Water Body: <u>Chippewa River, Wetland Trib</u>			
Discharger: <u>Bullfrog Business Trout Farm</u>			

If stream is classified as Limited Forage Fish (LFF) or Limited Aquatic Life (LAL), check any of the following Use Attainability Analysis factors that are identified in the classification report:

- Naturally occurring pollutant concentrations prevent the attainment of use
- Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met
- Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place
- Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or operate such modification in a way that would result in the attainment of the use
- Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses
- Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact

Supporting Evidence in the report (include comments on how complete/thorough data is)

- Biological Data (fish/invert)
- Chemical Data (temp, D.O., etc.)
- Physical Data (flow, depth, etc.)
- Habitat Description
- Site Description/Map
- Other:

Historical Reports in file:

3/23/04 - Paul Laliberte

Additional Comments/How to improve report:

lAL = wetland default

REPORT OF A WETLANDS INVESTIGATION PURSUANT TO NR103
AND WATER QUALITY STANDARDS REVIEW
FOR BULLFROG BUSINESS TROUT FARM
NEAR DUNNVILLE WILDLIFE AREA

INVESTIGATION DATE: OCTOBER 28, 1993

FIELD INVESTIGATOR:

PAUL LA LIBERTE

REPORT DATE: March 23, 1994

REPORT AUTHOR:

PAUL LA LIBERTE

Bullfrog Business Trout Farm holds a WPDES permit to discharge to an intermittent drainageway tributary to a wetland complex within the Dunnville Wildlife Area. The permit was first issued in 1989 and is currently being re-issued. This evaluation was done to comply with USEPA requirements for variance stream classifications and includes application of Chapter NR103, Wisconsin Administrative Code, Water Quality Standards for Wetlands, which was promulgated July, 1991.

An intermittent tributary draining about 1.3 mi² of primarily agricultural watershed passes by the facility. Due to the sandy nature of local soils, the tributary shows evidence of carrying heavy sand bed loads that have formed a delta where the ravine which contains the drainageway enters the Dunnville Wildlife Area. The delta (indicated on the enclosed aerial photo) is currently vegetated with a lowland deciduous forest including river birch and white ash. Some of the channel braids contain standing water at low flow. The delta appears to continue to aggrade as sand is deposited, and should continue to enlarge over time. The delta is expanding into shrub marsh over most of its perimeter, with the remainder extending into a herbaceous marsh of emergent vegetation on the east. The single, intermittent tributary channel converts to a braided pattern in the delta and finally to sheet flow as the border of the delta is approached. The delta currently is about 10 acres and extends about halfway across an elongate wetland complex in the Dunnville Wildlife Area. This complex appears to be the remnant of a former channel of the Chippewa River and covers about 500 acres. The complex includes regions of standing water (about 20%), herbaceous marsh, wetland shrub marsh and floodplain forest. An open water portion of the complex is called Wallace Lake. The lake winterkills most years, which limits its fishery potential. The entire complex, including the delta, is annually inundated during floods of the Chippewa River.

The delta area wetland and the associated wetland complex, by virtue of being part of designated and managed wildlife area, has functional value for habitat, floral diversity and recreation at a high level of significance. Due to its location on the landscape, the delta area wetland and associated complex has functional value for flood storage and water quality protection (sediment trapping) at a high level of significance.

The facility has a 1000 gpm well as the sole water source and is designed for flow-through fish rearing. Although permitted for discharges of up to 1000 gpm, the facility currently has a 300 gpm well pump. Fish are reared in concrete raceways with discharge to an unlined grow-out pond currently under construction. The effluent seeps to groundwater through the local sand and gravel soils and does not reach the intermittent stream channel. The sandy soils are expected to continue to seep all the effluent to groundwater, even when all the grow-out and warmwater culture ponds are lined and completed, provided the discharge rate stays at 300 gpm. When draining ponds, or when a higher capacity well pump is installed, the discharge may reach the intermittent tributary.

Since groundwater elevation determines the vegetation patterns in the 500 acre wetland complex, the addition of the effluent should have little effect on vegetation. Any nutrient loading from the facility should be inconsequential as compared to the already very productive condition of the complex.

Short duration discharges to the tributary, occurring when ponds are drained, should not significantly alter the stream channel pattern. Due to their short duration, they would have limited potential to mobilize enough of the

sand stream bottom to change the channel shape. As long as the channel shape and watershed land use remains unchanged, the rate of expansion of the delta should not change. When continuous discharges of 1000 gpm begin, some channel degradation and associated delta enlargement could be possible as a result of the sustained, high rate discharge. This would be dependant on the amount of water lost to seepage vs runoff. Since loss to seepage is unpredictable, an evaluation of the potential effects of a long-term, high rate discharge should be simulated using a short term discharge. This could be done by observing flow distribution during a 1000 gpm pond draining. The stream channel should be examined for signs of bedload movement to determine if the discharge is moving the stream bottom. It is likely that the sandy nature of the soils will cause even a 1000 gpm discharge to seep to groundwater.

RECOMMENDATIONS:

Continued operation under the existing WPDES permit conditions should not cause a problem, and all water quality standards should be met. For confirmation, DNR Water Resources Management should supervise a flow study at a 1000 gpm discharge rate once the facility is capable of delivering the rate. This can be done by monitoring a 1000 gpm pond drawdown.

If the continued expansion of the delta area into the Dunnville Area Wildlife Area is thought to constitute a deterioration of wildlife habitat, the watershed above the delta should be considered for nonpoint source pollution control cost share funding when the Wilson Creek Priority Watershed is selected. The Wilson Creek Watershed is proposed for a high priority rank in the current draft of the Lower Chippewa River Water Quality Management Plan Update.

cc. J. Cole - Menomonie
S. Thon - ECA
→ P. Trochlell - WR/2
J. Ball - WR/2
D. Webb - WR/2



Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Ballfrog Business Trout Farm

Name of Wetland/Owner:	<i>Wis DNR Danville Wildlife Area</i>
Location	<i>SE 1/4, SE 1/4, Section 18, Township 26N Range 12W & NE, NE, T26N, R12W, S18</i>
Evaluator(s)	<i>P. LaLiberte</i>
Date(s)	<i>3-16-94</i>

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration):

Vegetation dead & down - not able to assess vegetation diversity

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box.

Function	Significance				
	Low	Medium	High	Exceptional	N/A
Flood Storage			X		
Water Quality			X		
Groundwater	X				
Shoreline Protection	X				
Habitat			X		
Floral Diversity			X		
Aesthetics/Recreation			X		

List any Special Features/ Red Flags:

SITE DESCRIPTION

I. GENERAL DESCRIPTION

- A. Wisconsin Wetlands Inventory delineation: Delta - Broadleaved deciduous forest & shrub Palustrine wetland
- B. Wetland Type (shallow marsh, sedge meadow, etc.): Complex also includes emergent wet meadow, open water
- C. Estimated size of wetland in acres: Floodplain Forest
- D. Estimated size of wetland watershed in acres: Delta 110 Ac Complex ~500 Ac
- E. Estimated size of wetland watershed in acres: 1.3 m²

II. HYDROLOGIC CONDITIONS

A. Hydrologic Setting (primary water source). Check all that apply:

Surface Water Depression
(input=overland flow and precipitation)

Surface Water Slope/Riverine or Lacustrine during Chippewa River high water
(input=overland flow and flood) during local events

Groundwater Depression
(input=groundwater discharge)

Groundwater Slope/Flow Through under low water condition
(input=groundwater flow through)

B. Y N Does the wetland have standing water, and if so what is the average depth? <1' Approximately how much of the wetland is inundated? 1% of Delta 80% in complex

C. N Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils, histic epipedon (circle those that apply)?

D. Y N Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?

E. N Does the wetland have an inlet outlet, or both (circle those that apply)? Delta outlet is sheet flow

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- 1. Flooded
 - permanently
 - intermittently exposed (only dry in drought years)
 - semi-permanently (through growing season)
 - seasonally (water absent at end of growing season)
 - temporarily (brief periods during growing season)
 - intermittently (no seasonal pattern to flooding)

Delta

2. Saturated (surface water seldom present)

3. Artificial Conditions

- artificially flooded
- artificially drained

G. N Is the wetland a navigable body of water? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands. open water in complex

III. VEGETATION

A. Describe the vegetation communities present and the dominant species.

- floating leaved community dominated by: _____
- submerged aquatic community dominated by: _____
- emergent community dominated by: _____
- shrub community dominated by: _____
- Delta deciduous broad-leaved tree community dominated by: P. birch / ash
- Tamarack dominated
- needle-leaved evergreen tree community dominated by: _____
- sphagnum mat
- other (explain) _____

B. Other plant species identified during site visit:

herbaceous plants seasonally down

IV. SOILS

A. SCS Soil Map Classification: _____

B. Field description:

- Organic (histosol)? If so, is it a muck or a peat?
- Mineral soil? If so, is mottling or gleying present?
 Soil Description: _____
 Depth of mottling/gleying: _____
 Munsell color (matrix/mottles): _____

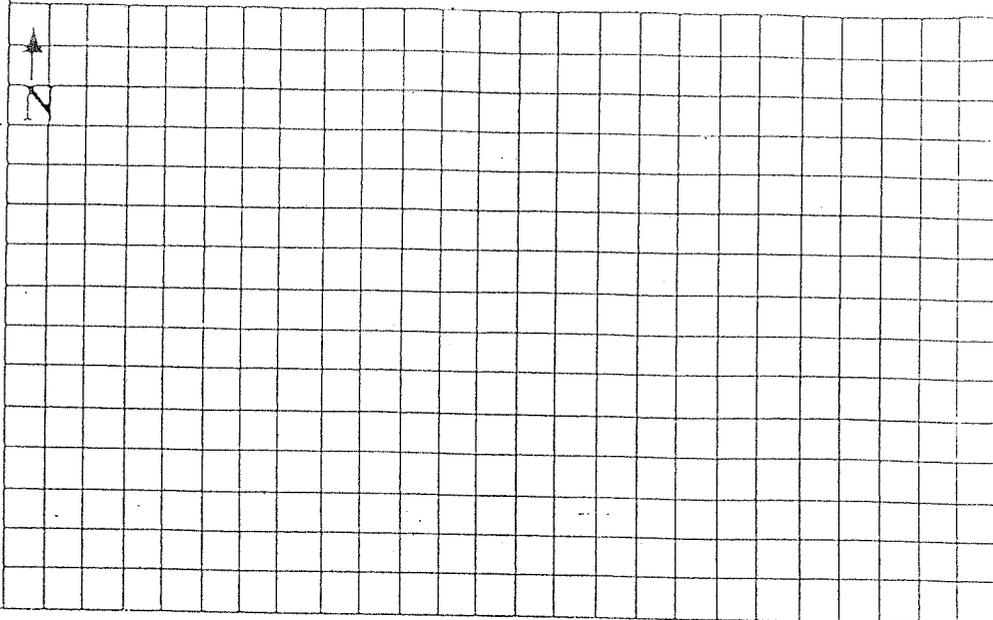
V. SURROUNDING LAND USES

<u>Land-Use</u>	<u>Estimated % of wetland watershed above Delta</u>
Industrial.....	
Commercial.....	
Residential.....	5.0%
Agricultural/cropland.....	90%
Agricultural/grazing.....	
Forested.....	
Grassed recreation areas/parks.....	
Old Field.....	
Highways/roads.....	
Other..... <u>Fish Farm</u>	50

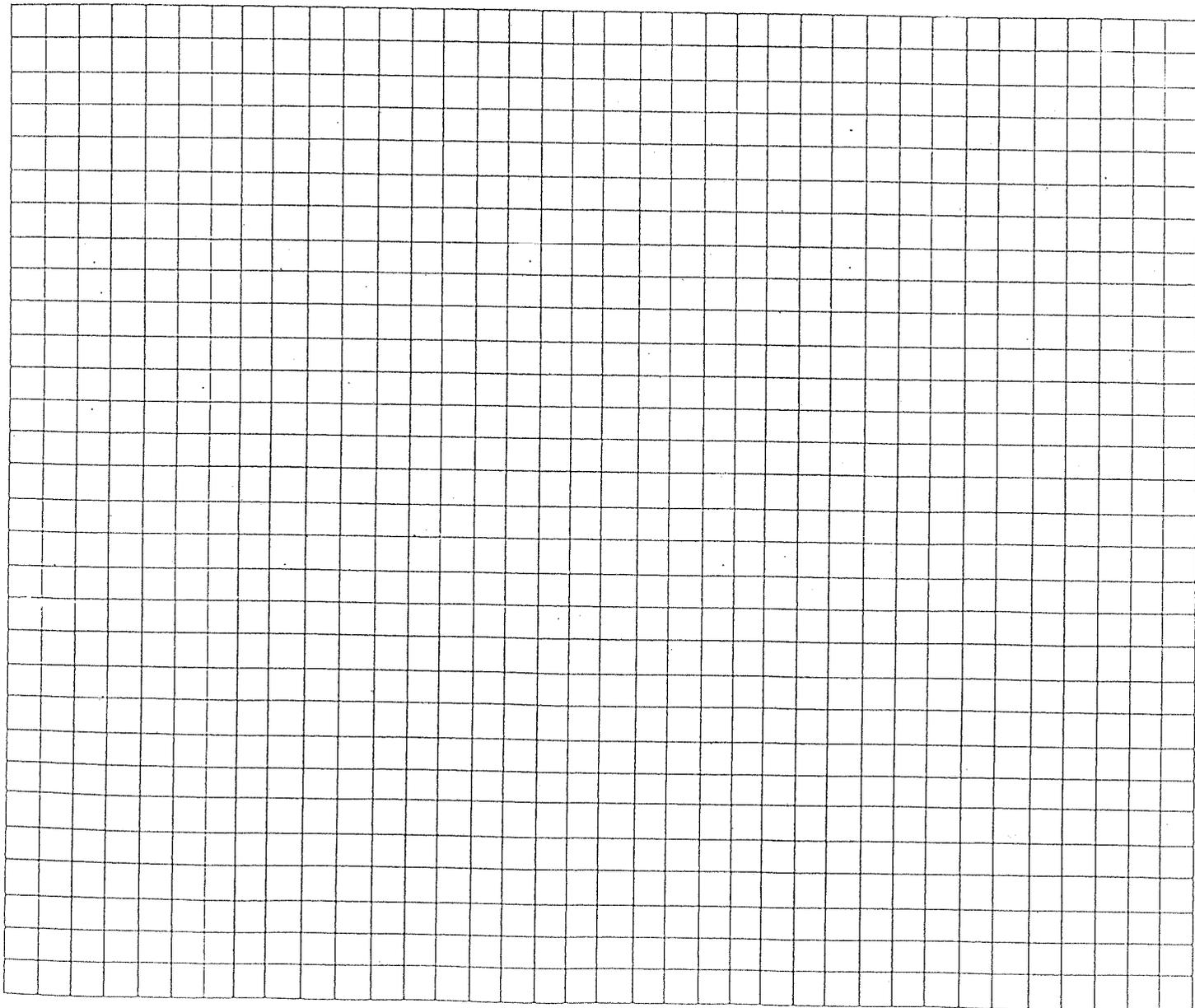
DRAWINGS OF PROPOSED
ACTIVITY SHOULD BE PREPARED
IN ACCORDANCE WITH SAMPLE
DRAWING SHEET.

Location Sketch (indicate scale). Show route to project site; include nearest mainroad and crossroad.

Proposed Materials:



Project Plans (Include top view and typical cross sections. Clearly identify features and dimensions or indicate scale.)
(Use additional sheets if necessary)



FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

Special Features/ RED FLAGS

1. Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code):

- a. Cold water community as defined in NR 102.04(3)(b) (including trout streams or trout lakes)?
- b. Lakes Michigan and Superior and the Mississippi River?
- c. State or federal designated wild and scenic river?
- d. Designated State riverway?
- e. Designated State scenic urban waterway?
- f. Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, Special wetland inventory study, or an advanced delineation and identification study?
- g. Calcareous fen?
- h. State park, forest, trail or recreation area? *DNR land*
- i. State or federal designated wilderness area?
- j. Designated or dedicated state natural area?
- k. Wild rice water listed in NR 19.09?
- l. Surface water identified as an outstanding or exceptional resource water in NR 102.

Dunnville Wildlife Area

2. Y N According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland? If so, what species? *Bald eagle nesting territory*

Flood storage/attenuation

1. Y N Is the wetland a surface water slope/riverine or lacustrine or surface water depression type wetland? If NO, STOP and enter LOW for this function. If YES, then continue.
2. Y N Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)?
3. Y N Does the wetland significantly reduce run-off velocity due to its size, configuration, or vegetation type and density?
4. Y N Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
5. Y N Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? *not of the Delta*

6. Y N Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating floods or storing flood peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

7. Y N Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]

Yes - Chippewa River Flooding

Water quality protection

1. Y N Does the wetland receive overland flow as the primary source of water (i.e Surface Water Slope or Surface Water Depression type wetland)?

2. Y N Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland?

3. Y N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?

4. Y N Based on your answers to the previous section, does the wetland perform significant flood attenuation (residence time to allow settling)?

5. Y N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?

6. Y N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)? *Algal blooms & duckweed in open water wetland complex*

7. Y N Is the wetland constantly saturated thus providing a condition that promotes trapping of nutrients in peat (i.e. limited flushing of the wetland)? *Complex*

Groundwater recharge and discharge

1. Y N Is the wetland a Groundwater Slope/Flow Through or Groundwater Depression type wetland? If NO, STOP and enter LOW for this function. If YES, then continue.

2. Y N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? (NOTE: If area is a calcareous fen, see RED FLAGS section).

3. Y N Related to discharge, is the wetland important for maintaining base flow in a stream?

4. Y N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)?

Shoreline Protection

Wellace Lake

1. Y N Does the wetland front on open water? If NO, STOP and enter "not applicable" for this function. If YES, then continue.
2. Y N Is the bank or shoreline exposed to constant wave action caused by boats?
3. Y N Is the bank or shoreline exposed to wave action due to a long wind fetch?
4. Y N Is the shoreline vegetated with perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?

Floral Diversity

could not assess - answers based on wildlife area master plan

1. Y N Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. Y N Is the wetland plant community regionally scarce or rare?

Fish and Wildlife Habitat

1. List any animal species observed or evidenced:

It is a designated Wildlife Area
(the complex)

2. Y N Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersions of those vegetation types?
3. Y N Is the estimated ratio of open water to cover between 30 and 70%? 70%
4. Y N Does the surrounding upland habitat support a variety of animal species?
5. Y N Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
6. Y N Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife in the area?
7. Y N Are there other wetland areas near the subject wetland that are important to wildlife?
8. Y N Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
9. Y N Does the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
10. Y N Is the wetland providing habitat that is scarce to the region?

Aesthetics/Recreation/Education and Science

- 1. Y N Is pollution (i.e. litter, oil residue, hyper-eutrophication, odors) not obvious within the wetland?
- 2. Y N Is the wetland located within a predominantly urbanized area? *Sees lots of use*
- 3. Y N Is the wetland accessible and/or frequently seen by the public?
- 4. Y N Is more than half of the wetland not observable from any easily accessible vantage point?
- 5. Y N Is the wetland diverse in plant communities or interspersed with open water? *complex*
- 6. Y N Is the wetland, or could it be, used for recreation, and if so, which activities? Is there any documented recreational uses?

designated wildlife Area

- nature observation
- hiking
- biking
- skiing
- photography
- fishing
- hunting
- boating/canoeing
- wild ricing
- other

7: Y N Is the wetland being used for education or scientific study purposes?
don't know

begin now

Shrub
Marsh

Herbaceous
Marsh

Lowland
Deciduous
Forest

Intermittent
Stream Channel

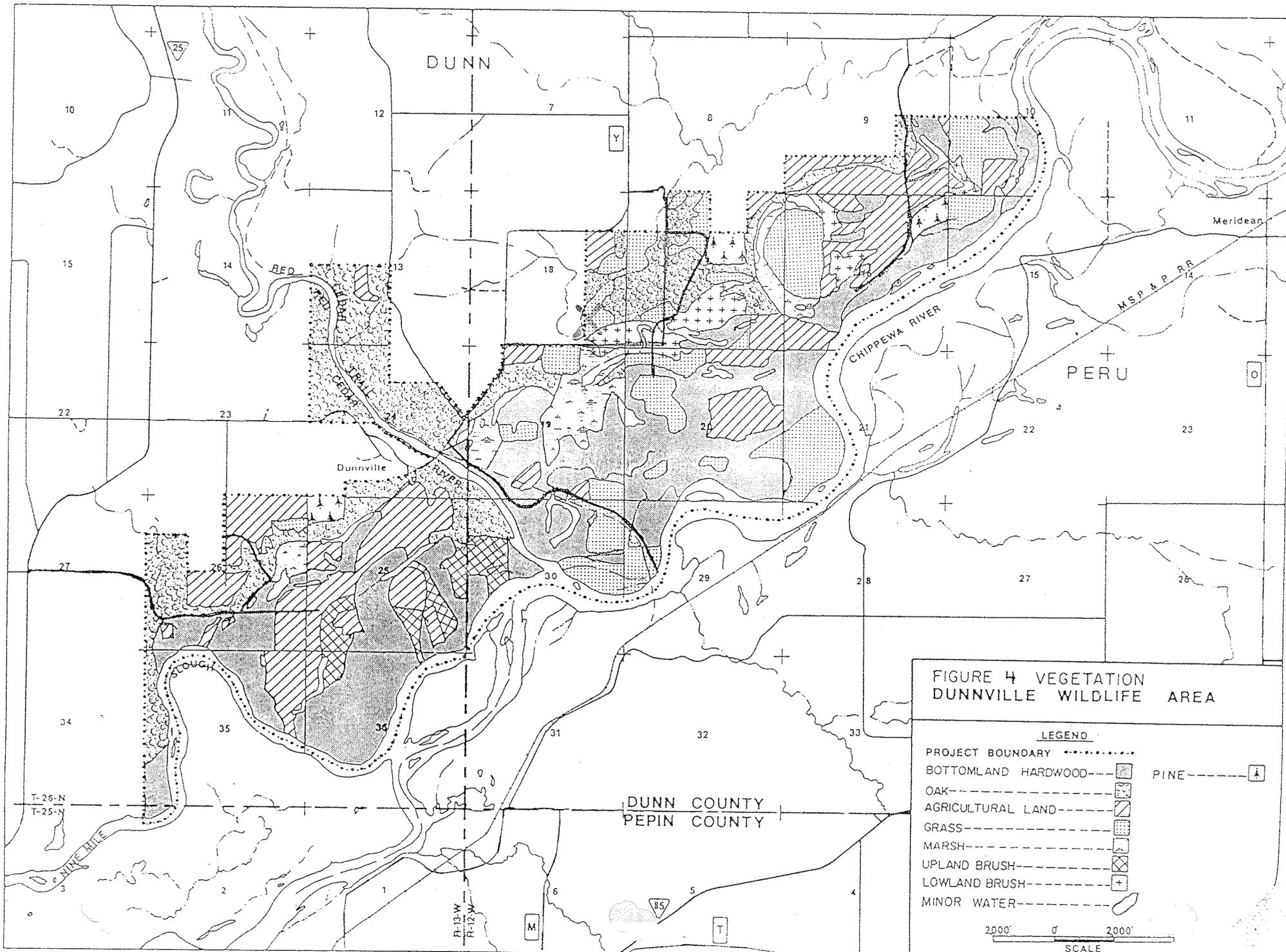


FIGURE 4 VEGETATION
DUNNVILLE WILDLIFE AREA

- LEGEND**
- PROJECT BOUNDARY [dotted line]
 - BOTTOMLAND HARDWOOD [diagonal hatching] PINE [dashed line with triangle]
 - OAK [horizontal hatching]
 - AGRICULTURAL LAND [grid pattern]
 - GRASS [stippled pattern]
 - MARSH [cross-hatching]
 - UPLAND BRUSH [diagonal hatching]
 - LOWLAND BRUSH [plus sign pattern]
 - MINOR WATER [irregular shape]

2000' 0 2000'
SCALE