Floodwater Storage Design Information Sheet

SI Units

This worksheet is a supplement to Publication 832: Agricultural Erosion Control Structures: A Design and Construction Manual.

Use this form to calculate the quantity of water exiting from a pond. It will indicate the effectiveness of a particular size of pond in reducing the peak flow associated with an upstream watershed. Follow all the instructions on this form and on all the associated figures.

Section 1: Floodwater Storage Design Information

No.	Description	Input Value
1	Watershed area	_____ ha
2	Average grade of watershed	_____ %
3	Runoff curve number from Tables 2.2 – 2.4	_____
4	Peak flow from watershed for a 25-year storm from Table 2.5-M to 2.11-M	_____ m^3/s
5	Obtain one-day rainfall for the watershed location from Table E.1	_____ mm
6	Obtain the depth of runoff (Vr) from Table E.2-M	_____ mm
7	Calculate the ponding volume available	_____ m^3
8	Calculate the equivalent depth of storage (Vs) over the entire watershed	Vs = (pond volume _____ x 1000) ÷ (_____ hectares x 10,000) = _____ mm
9	Refer to Figure E.3 to decide which chart to use Table E.3 (A) or Table E.4-M (B)	Choose one (**A** or **B**) and proceed to appropriate section below:

A. Table E.3

If Table E.3 is used, divide Vs by Vr (i.e. divide answer in Line (**8**) above by the answer in Line (**6**) above):

Vs _____ ÷ Vr _____ = _____

Using Table E.3, read the first decimal place of Vs/Vr on the lem side and the second decimal place across the top. Obtain the answer where the two lines intersect:

Answer: _____

Multiply this answer by the peak flow in Line (**4**) above to obtain the peak pond outflow:

Answer: _____ x _____ = _____ m^3/s

B. Table E.4-M
If Table E.4-M is used, read Vs along the top of the chart and Vr along the left side to obtain discharge: Answer: _____ $m^3/s/ha$ Multiply this answer by Line (**1**), the number of hectares in the watershed, to obtain the peak pond outflow: Answer: _____ x _____ = _____ m^3/s

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