

Stream Rubicon
 Drainage M.F. American
 Test Section Ellicott Crossing

Date 4/10/80
 Observers RSBL
 Length of Section 50 m

HABITAT QUALITY
 INDEX-FIELD SHEETS

$WT = 42F$

Width (10 measurements)	Cover Area (m ²)	Eroding & Unstable Stream Banks	Velocity (ft/s)	Nitrate N (mg/l)	
1) 80'	20' x 5m		1.5	φ	
2) 92	30		3.2	φ	
3) 85	25	} ↓			
4) 90	20				
5) 85	15				
6) 65	30				
7) 70	25				
8) 75	20				
9) 80	15				
10) 75	15				
Mean W =				Mean = 2.35 ft/s	Mean = φ
23.7 m				= .72 m/s	
Total Cover Area = 327.74 m ²					
= 27.66%			Total = φ	% Length = φ	

(X)

Stream: RUBICON

Maximum Summer Temperature=

Late Summer Flow= ~10 cfs

Annual Flow Variation= moderate fluct (dam upstream)

Substrate= OCCASIONAL SAND

ADF =
CPF =

Summary

Parameter	Observed	HQI Rating	Comments
1) Nitrate-Nitrogen	∅	∅	
2) Late summer flow	CPF ~ 308 ADF	3	(WR DATA 1976)
3) Annual flow variation	MOD FLUC	2	
4) Max summer temp.	~18°C	4	
5) Eroding streambanks	∅	4	
6) Mean width	23.7 m	1	
7) Cover	27.66%	2	
8) Velocity	.72 m/s	3	
9) Substrate	OCC	2	

Stream: RUBICONObserved Standing Crop (& date) = 40 lb/acre

Predicted Standing Crop with HQI:

$$\begin{aligned} \log_{10} (Y + 1) = & [(-0.903) + (0.807) \log_{10} (X_1 + 1)^3 \\ & + (0.977) \log_{10} (X_2 + 1)^4 \\ & + (1.233) \log_{10} (X_3 + 1)^5 \\ & + (0.631) \log_{10} (F + 1)^1 \\ & + (0.182) \log_{10} (S + 1)^2] [1.2085] \end{aligned}$$

$$\begin{aligned} .49 \times .807 &= .39 \\ .60 \times .977 &= .60 \\ .70 \times 1.233 &= .86 \\ 0 \times .631 &= 0 \\ 1.27 \times .182 &= .23 \\ & \underline{- .903} \\ & \Sigma 1.18 \end{aligned}$$

- Where: \hat{Y} = Predicted trout standing crop
- (2) X_1 = Late summer flow (assigned HQI rating #)
- (3) X_2 = Annual flow variation
- (4) X_3 = Maximum summer temperature
- F = Food index = $X_3 (X_4) (X_9) (X_{10})$ $4 \times 0 \times 2 \times 3 = 0$
- S = Shelter index = $X_7 (X_8) (X_9) (X_{11})$ $2 \times 4 \times 1 \times 1 = 8$
- (6) X_4 = Nitrate
- (2) X_7 = Cover
- (4) X_8 = Eroding streambanks
- (2) X_9 = Substrate
- (3) X_{10} = Velocity
- (1) X_{11} = Width

$$\hat{Y} = \text{ANTILOG}_{10} 1.11(1.20) - 1.0$$

$$= 15.14(1.20) - 1.0$$

$$= 17.16 \text{ kg/HA} = 15.72 \text{ lb/acre}$$