

Appendix 5e Rosenberg

Slide 1

Using population estimates to set conservation objectives

Assumption: return populations of priority species to pre-BBS levels over next 3 decades

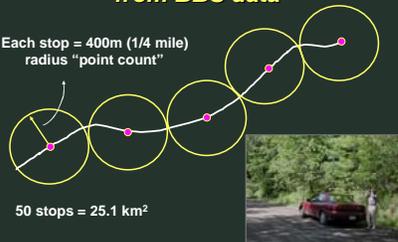
- Use BBS abundance data to estimate pop size
- Use BBS trend data to calculate % loss
- If > 50% loss, double population
- If 15-50% loss, increase 50%
- If stable or increasing, Maintain population

Habitat goal = population target * w/in habitat density (assumes habitat is limiting)

Slide 2

Estimating Population Size from BBS data

Each stop = 400m (1/4 mile) radius "point count"



50 stops = 25.1 km²

Slide 3

Assumptions: detectability

- Species have relatively fixed average detection distances at BBS stops
- For visually detected species, full radius of BBS stops
 - total sample area of 25.1 km² per BBS route
- Average maximum detection distance for forest birds = 128 m (Emlen and DeJong 1981)
 - total sample area of 2.5 km² per BBS route
- Intermediate species (Bobolink, sparrows) – detection distance = 200m
 - total sample area of 6.3 km² per BBS route



Slide 4

Calculating population size

Population size = landscape-level abundance (birds per route) / effective area sampled per route * size of geographic area

- Assumes one member of a pair is detected at any time (number is doubled for number of individuals)
- Correction for change in detectability with time of day

Wood Thrush = 2.30

Broad-winged Hawk = 2.62

Slide 5

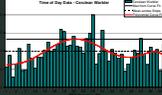
Example: Cerulean Warbler

Occurs on 234 BBS Routes (1990-99)

Detectable to 125 m (area = 2.5 km²)

Time of day correction = 1.35

Pair correction = 2.0

Pop size = SUM (across BCRs):
(rel abund/2.5km² X BCR km² X 1.35 X 2.0)

= 570,000 individuals (285,000 pairs)

Slide 6

Comparisons with other estimates: ON BB Atlas

