

## APPENDIX A

## RED PINE FOREST WITH DEAD TIMBER.

**Location:** Minnesota; Clearwater Co., University of Minnesota Forestry and Biological Station, Itasca State Park Wilderness Sanctuary; 47°13' N, 95°12' W, USGS Itasca State Park Quadrangle. **Continuity:** Established and censused 1990. **Size:** 10.0 ha = 24.69 acres (40 squares 50 m x 50 m). **Description of Plot:** A quantitative survey of the vegetation gave the following results: Trees 3-inches diameter and over, based on ten 0.4 ha circular samples; 768.17 trees/ha; total basal area 32.46 m<sup>2</sup>/ha. Species comprising the total number of trees [figures after each species give number of trees/acre, relative density (%), relative dominance (%), frequency (%): Dead Trees, 125, 40.19, 34.51, 100; Red Pine (*Pinus resinosa*), 46, 14.79, 33.17, 80; Balsam Fir (*Abies balsamea*), 45, 14.47, 8.13, 80; Maple (*Acer sp.*), 37, 11.9, 7.14, 90; White Pine (*Pinus strobus*), 17, 5.47, 7.57, 40; Birch (*Betula sp.*), 15, 4.82, 4.24, 60; Ironwood (*Ostrya virginiana*), 6, 1.93, 0.42, 30; Oak (*Quercus sp.*), 6, 1.93, 0.70, 30; Spruce (*Picea sp.*), 4, 1.29, 1.70, 40; Ash (*Fraxinus sp.*), 2, 0.64, 0.14, 20; Basswood (*Tilia americana*), 1, 0.32, 0.07, 10. Trees by diameter size class [figures after each size class give number of trees/acre, relative density (%), basal area in square feet/acre, relative dominance (%): A (3-6 in.) 107, 34.41, 10.7, 7.57; B (6-9 in.) 103, 33.12, 30.9, 21.85; C (9-12 in.) 54, 17.36, 32.4, 22.91; D (12-15 in.) 28, 9.0, 28.0, 19.8; E (15-21 in.) 15, 4.82, 27.0, 19.09; F (21-27 in.) 4, 1.29, 12.4, 8.77. Shrub stems/ha, 4730, ground cover, 93.5%, canopy cover, 95.5%, Mean canopy height 23 m. A sedge meadow covered approximately 10 km<sup>2</sup>. **Edge:** Bordered by similar forest on the west, north and east sides. On the south side three grid squares are buffered by 50 m zones and two begin at the edge of the road. **Topography:** Basically flat with a few scattered inclines. **Elevation:** 1475 ft. **Weather:** 12.8-21.7°C, wind, Beaufort 1-2, clear to overcast, slight precipitation during one census. **Coverage:** June 18, 21, 23, 25, 28, 30, July 5, 6, 7 between 0530-0915 and 1915-2130. Total obs.-hours: 61.25. **Census:** (Number of territorial males of each species in census plot; figures in parentheses give the number of territorial males/km<sup>2</sup>): Ovenbird, 25 (250); Pine Warbler 24.5 (245); Red-eyed Vireo 24 (240); Black-throated Green Warbler 13 (130); Canada Warbler 6 (60); Chestnut-sided Warbler 5.5 (55); Hermit Thrush 5 (50); Northern Parula 5 (50); Eastern Wood Pewee 4.5 (45); Great-crested Flycatcher 4 (40); Common Yellowthroat 3.5 (35); Mourning Warbler 2 (20); Brown Creeper 1.5 (15); Scarlet Tanager 1.5 (15); Black-capped Chickadee 1 (10); Pileated

Woodbecker 1 (10): Ruffed Grouse 1 (10): Winter Wren-5 (5). Total: 28 species:  
128.5 territorial males (1285/km<sup>2</sup>). Visitors: Broad-winged Hawk, Screech Owl,  
Yellow-bellied Sapsucker, Hairy Woodpecker, Black-backed Woodpecker, Gray Jay,  
Blue Jay, Common Raven, Red-breasted Nuthatch, American Redstart, Pine Siskin  
and Song Sparrow. KELLY MUNSON, 2719 Johnson St. NE, Minneapolis, MN 55418.  
CATHERINE PODESZWA, 7542 Tempo Terr., Fridley, MN 55432.

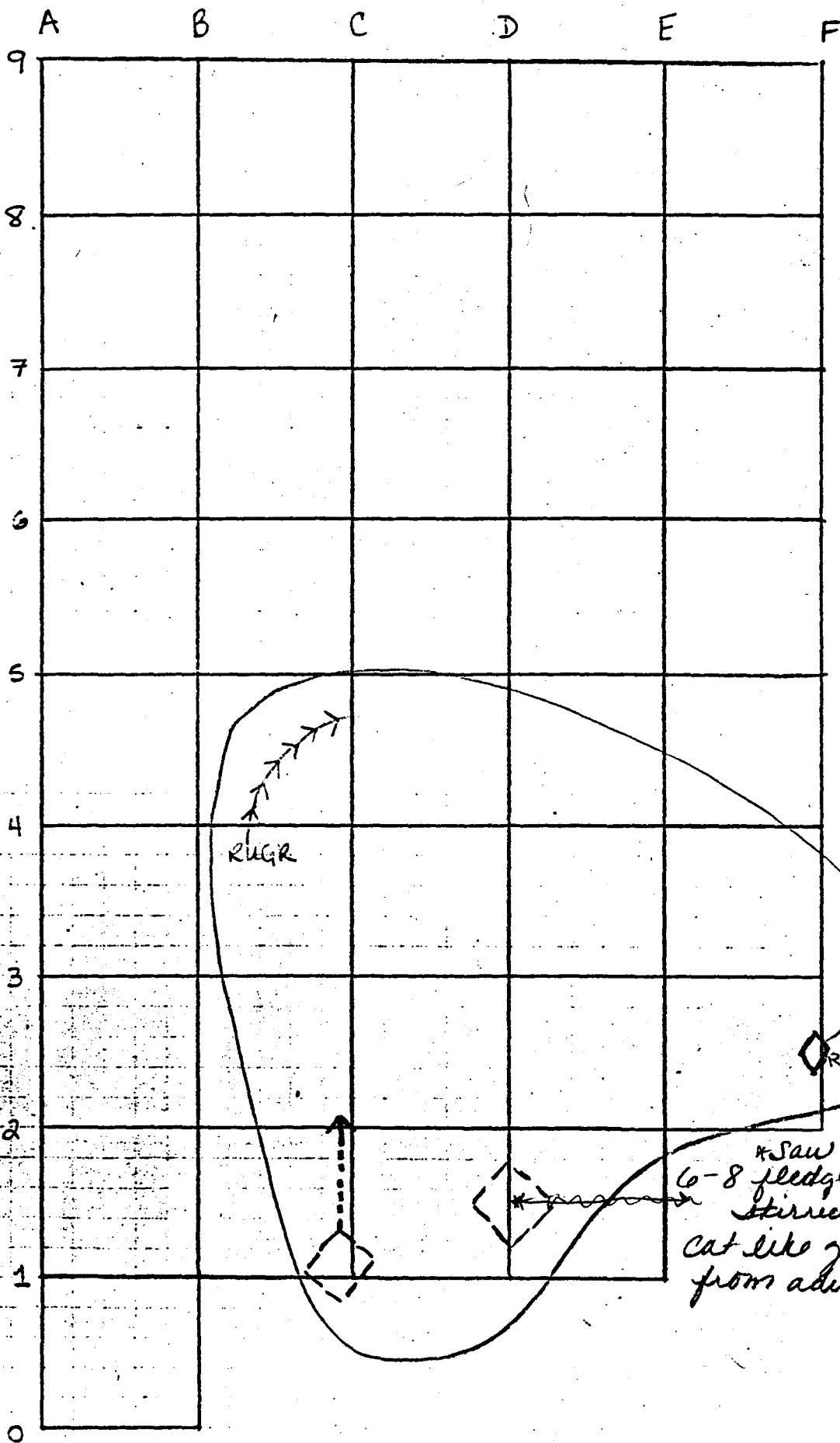
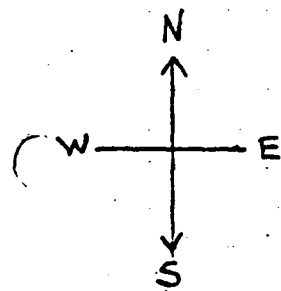
## Appendix B

### Red Pine Census 1991 Breeding Bird Territories

<u>Census Date</u>	<u>Color</u>
18 June	Blue
21 June	Orange
23 June	Brown
25 June	Purple
28 June	Yellow
30 June	Light Green
5 June	Dark Green
6 June	Red
7 June	Black

# RED PINE PLOT

# RUFFED GROUSE



RUGR

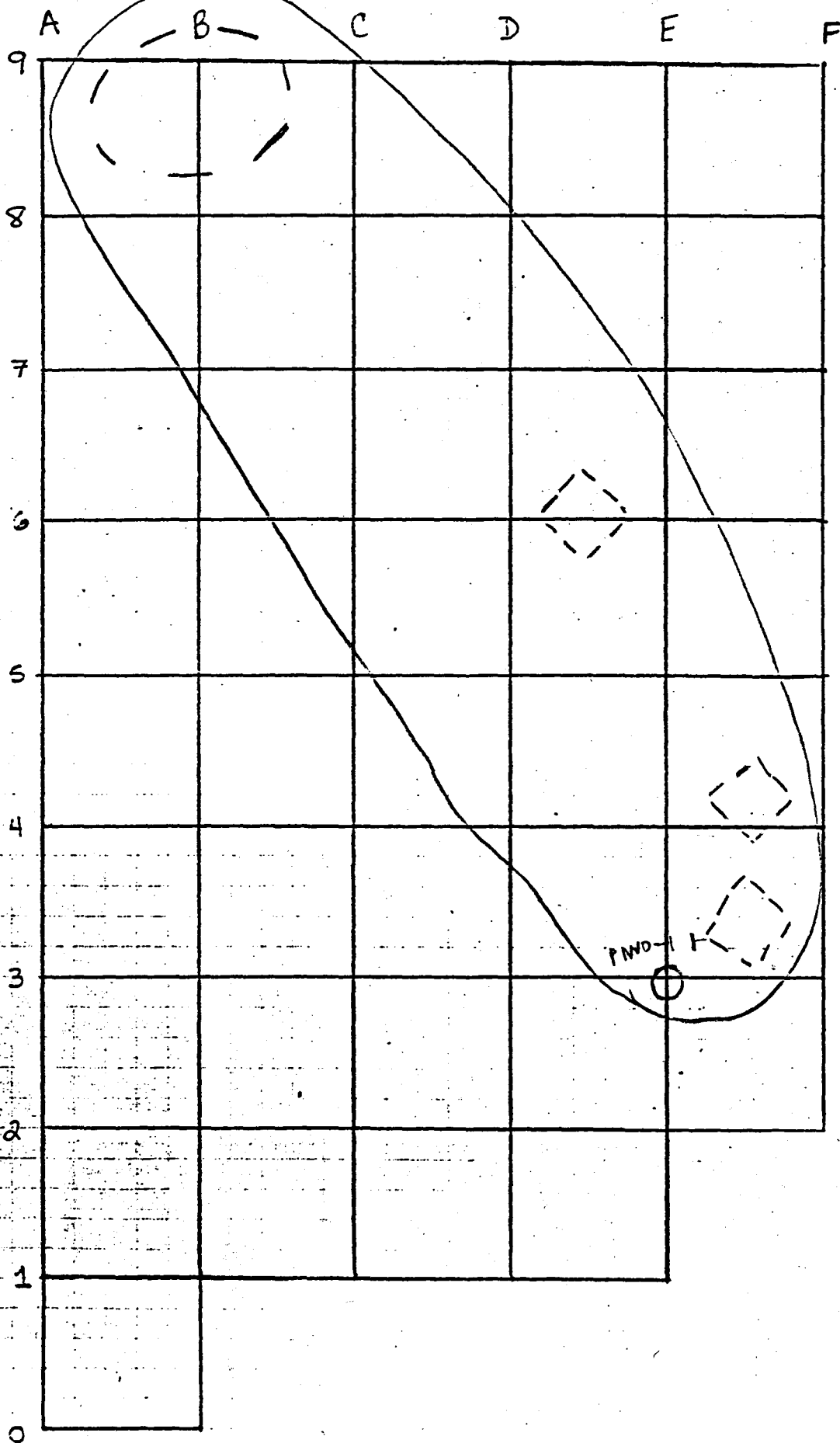
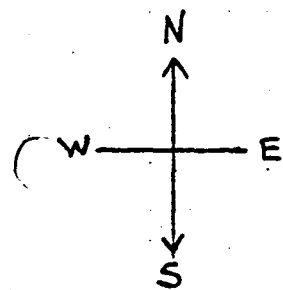
RUGR

\*Saw  
6-8 fledglings  
stirred up  
cat like growling  
from adult

0 50m

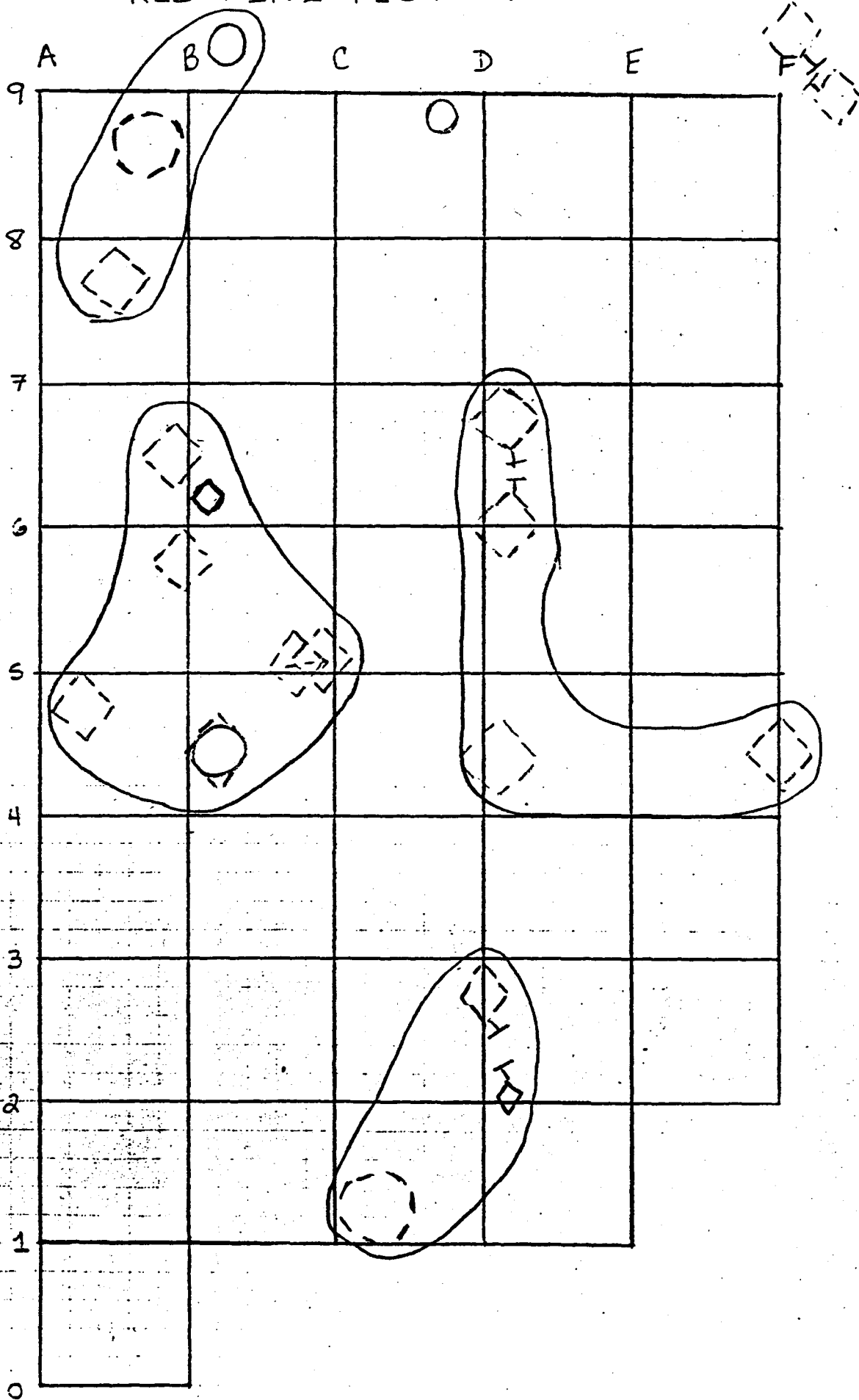
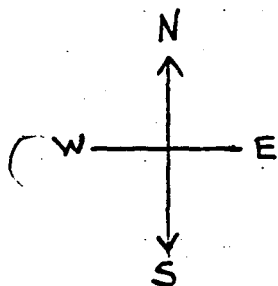
# RED PINE PLOT

# PILEATED WOODPECKER



0 50m

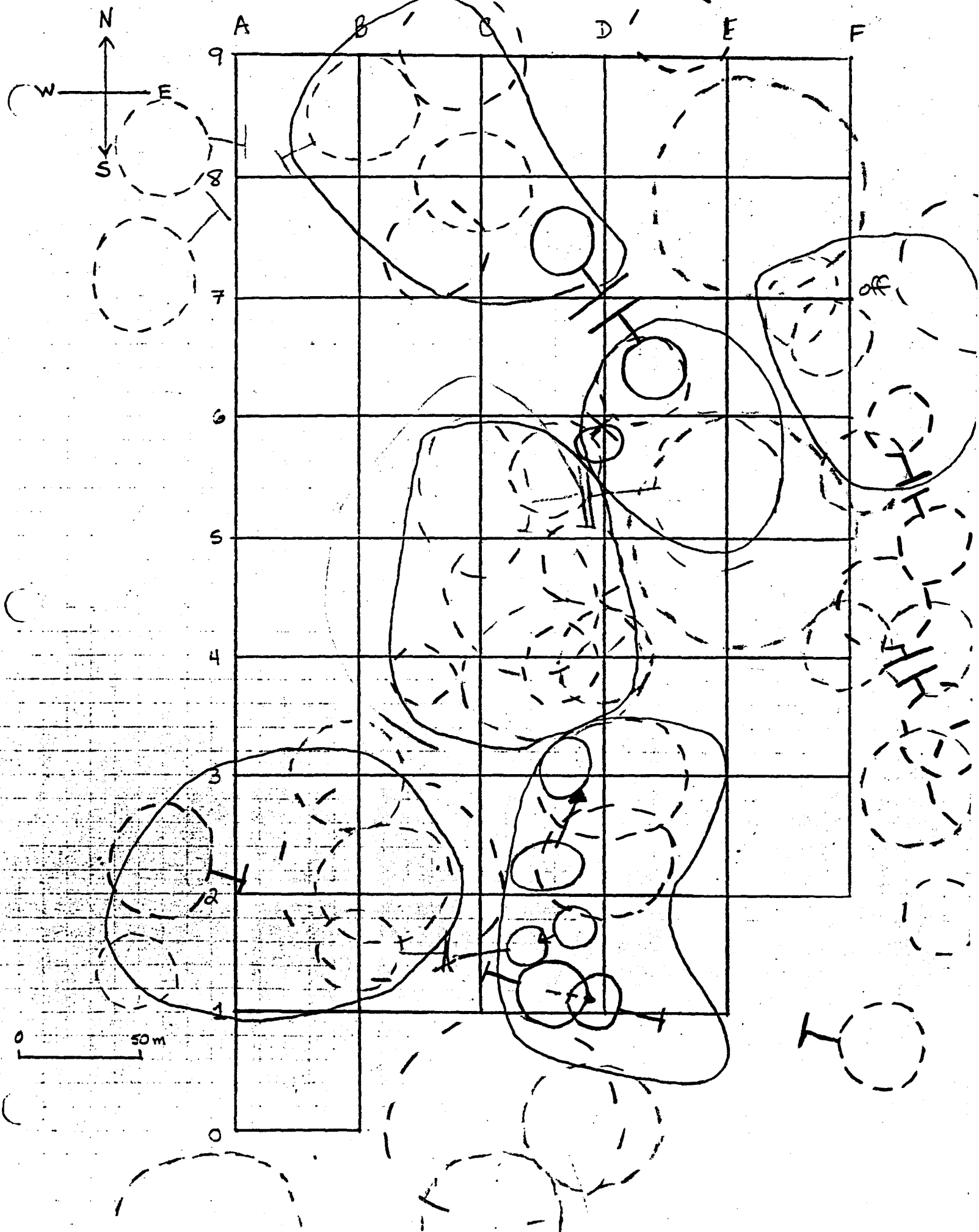
# RED PINE PLOT GREAT CRESTED FLYCATCHER



0 50m

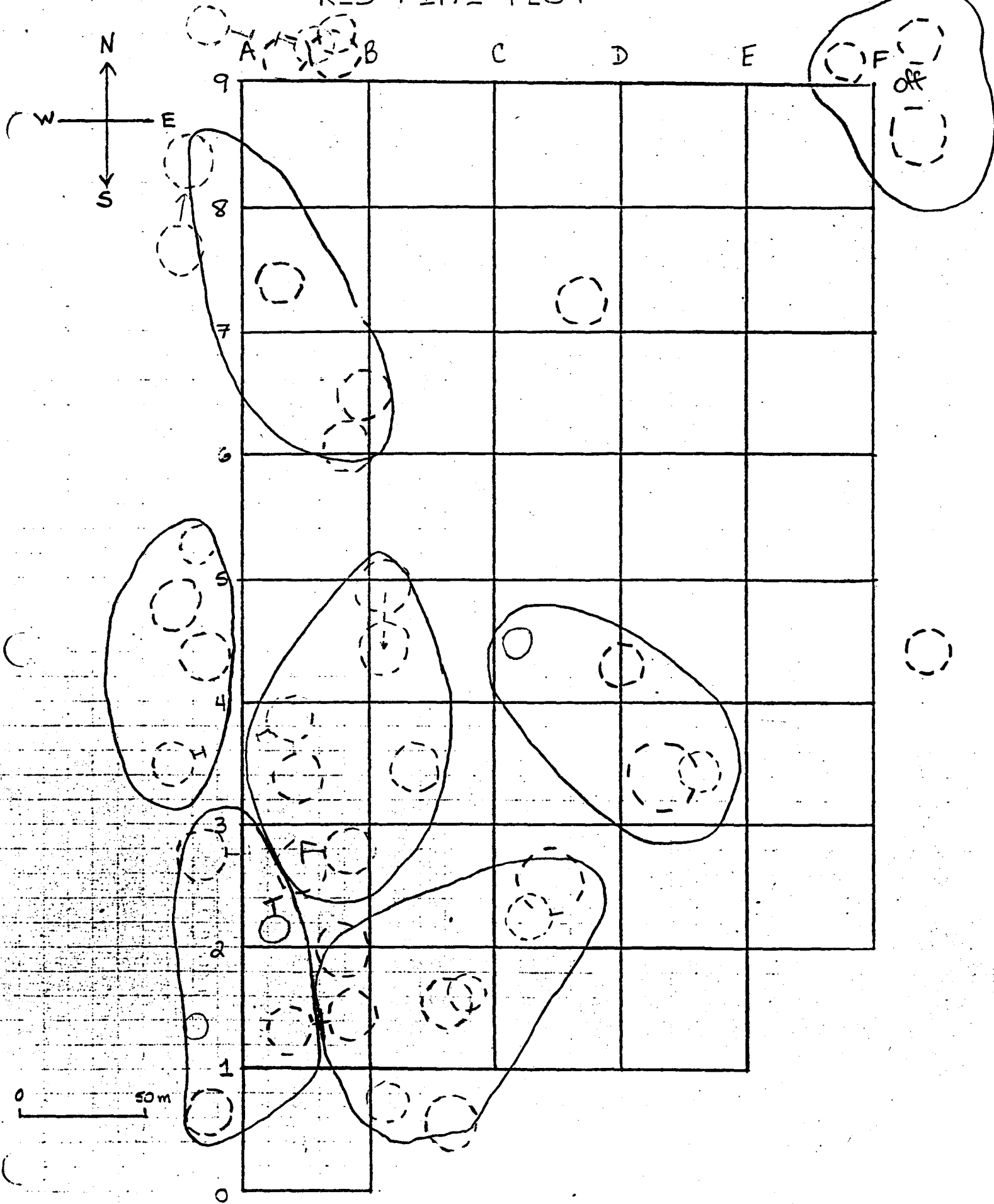
# RED PINE PLOT

Hermit Thrush



# RED PINE PLOT

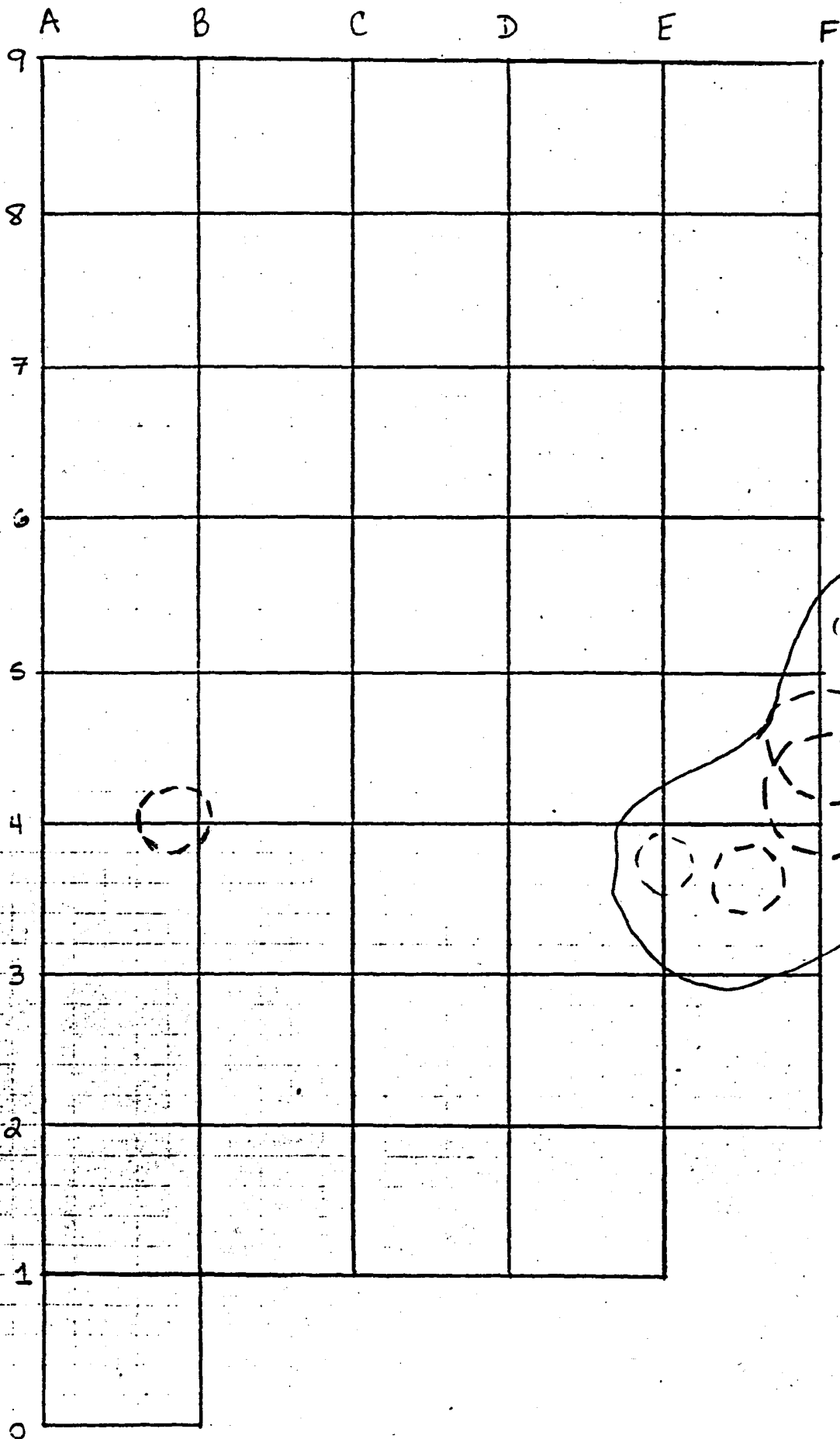
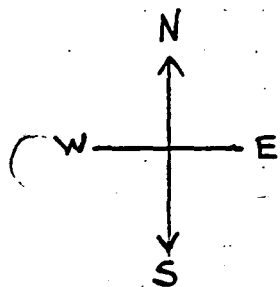
EASTERN PEEWEE





# RED PINE PLOT

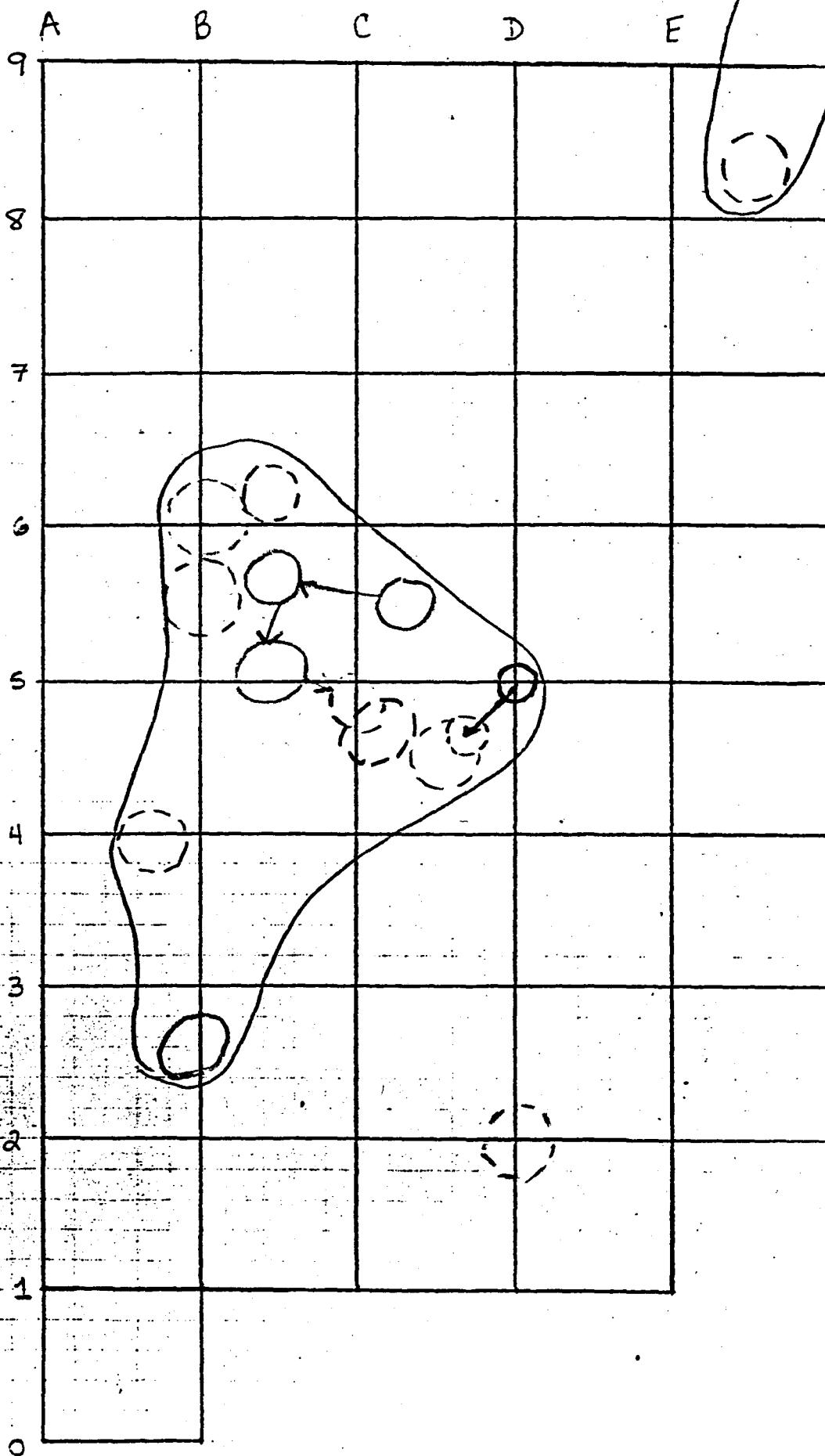
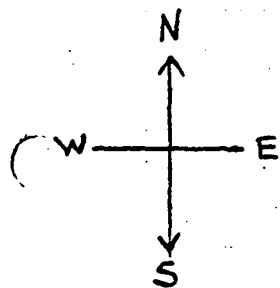
# WINTER WREN



0 50m

# RED PINE PLOT

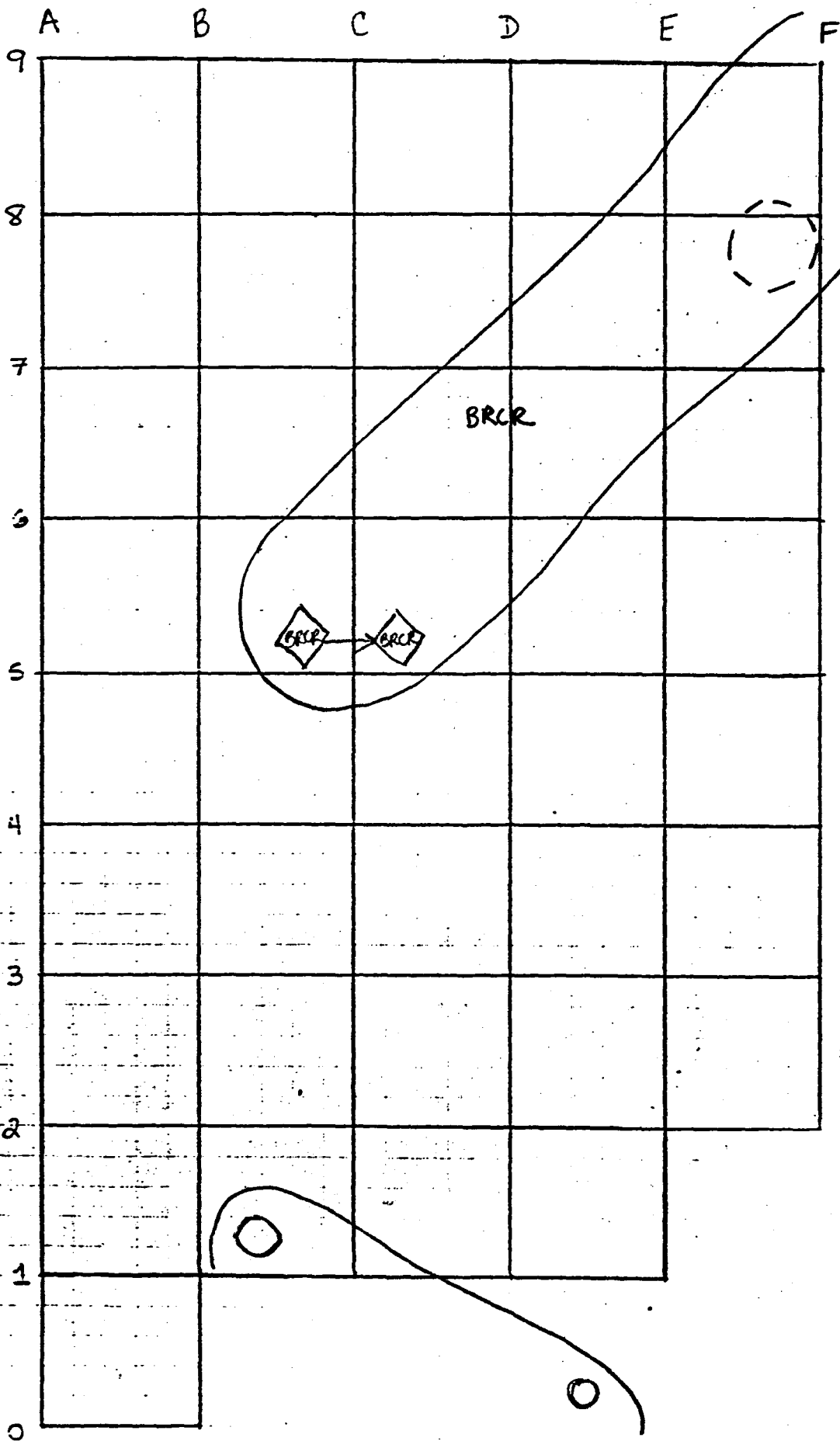
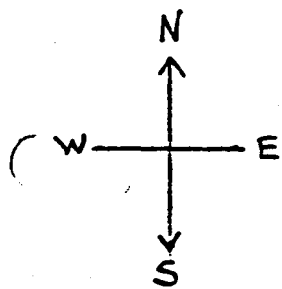
Scarlet Tanager



0 50m

# RED PINE PLOT

# Brown Creeper



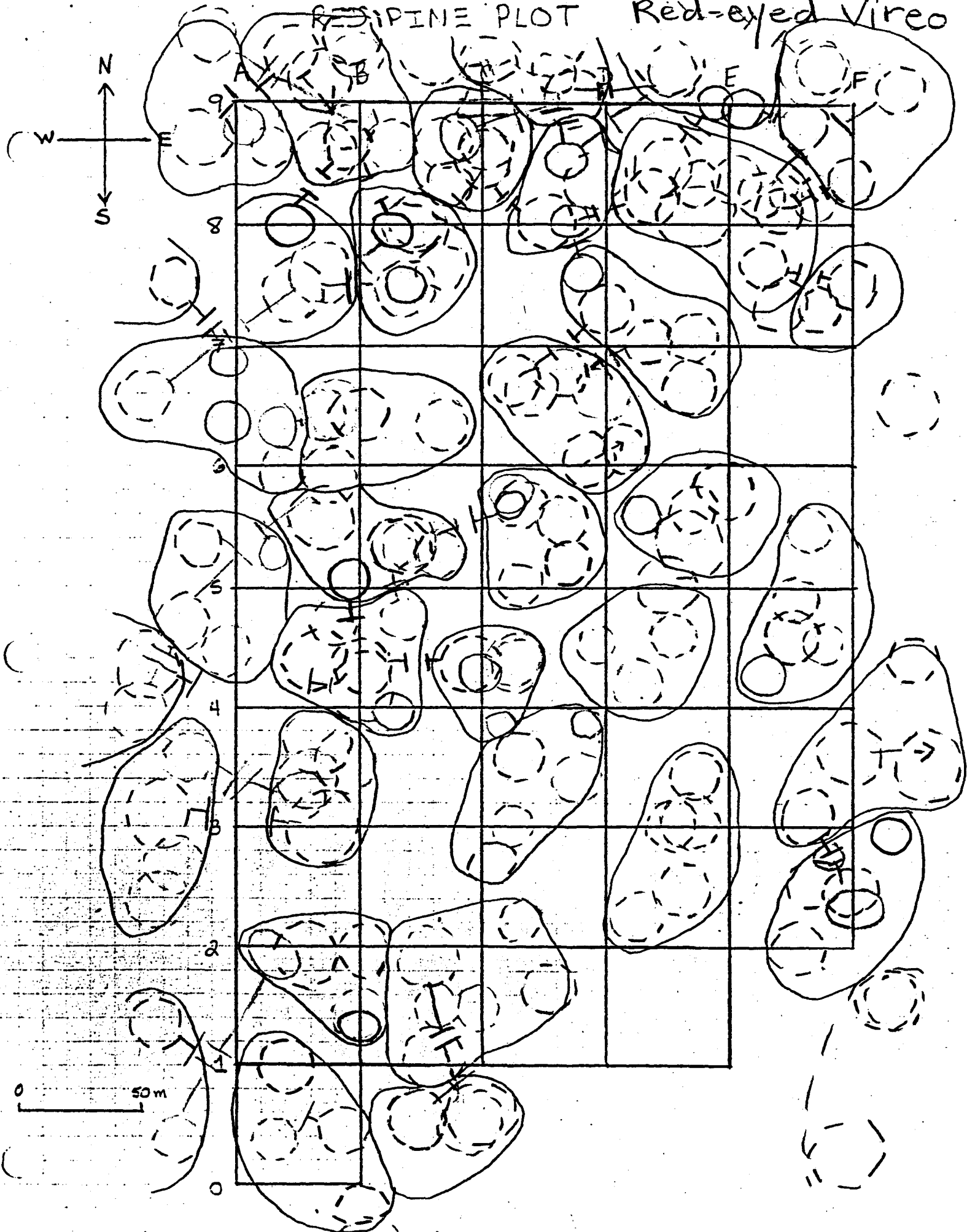
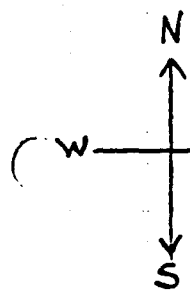
Saw 3  
on pine tree  
trunk

0 50m

A horizontal scale bar with a vertical tick at the left end labeled "0" and a vertical tick at the right end labeled "50m".

RED-PIPERINE PLOT

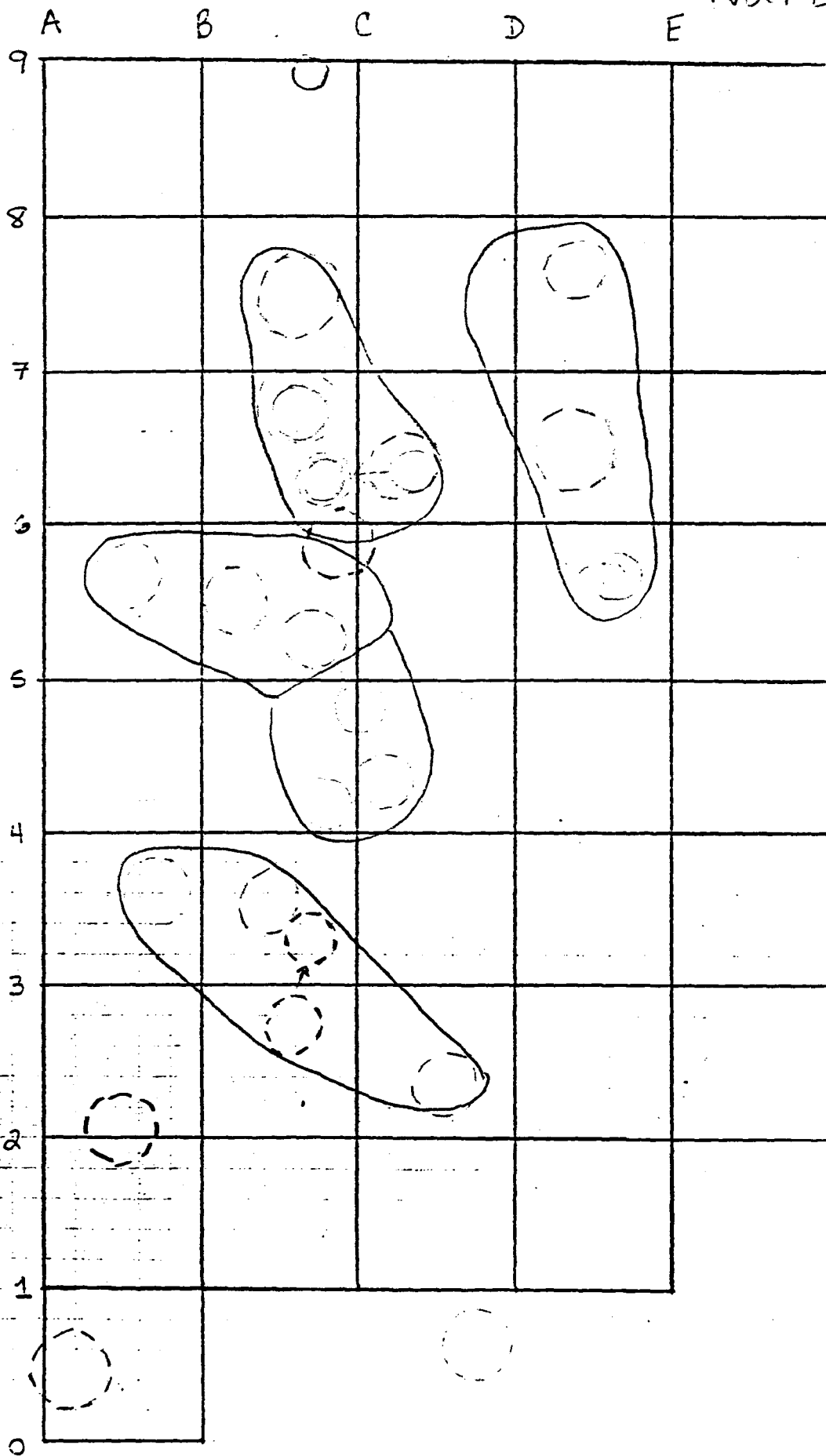
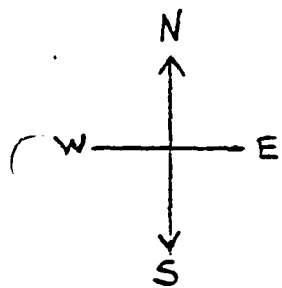
Red-eyed Vireo



0 50 m

# RED PINE PLOT

Northern Parula  
Warbler

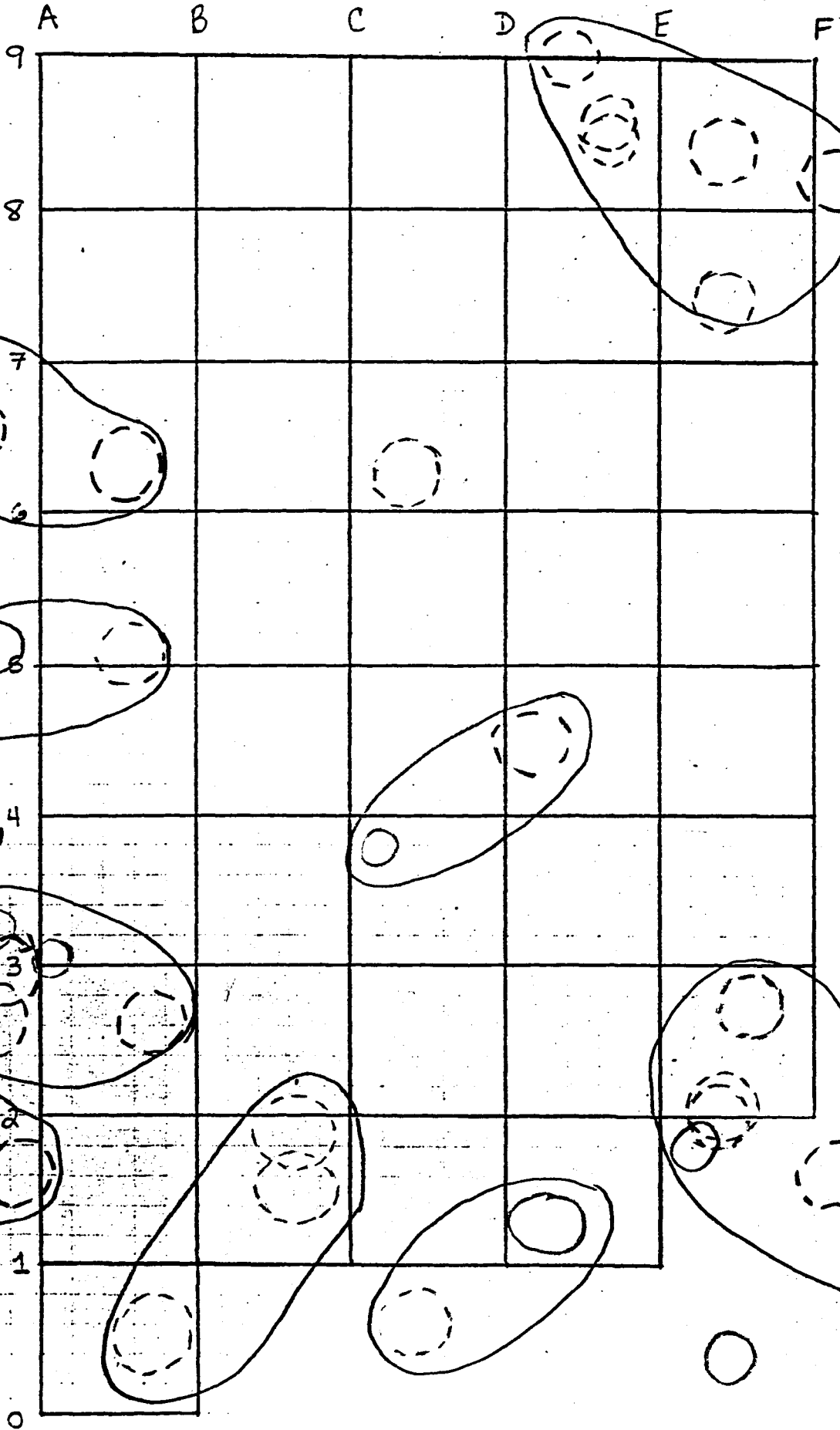
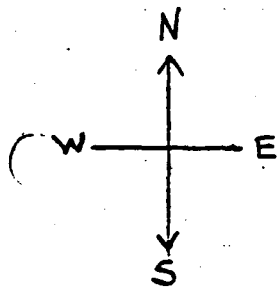


0 50m

A simple scale bar with a horizontal line and vertical ticks at each end, labeled '0' and '50m'.

# RED PINE PLOT

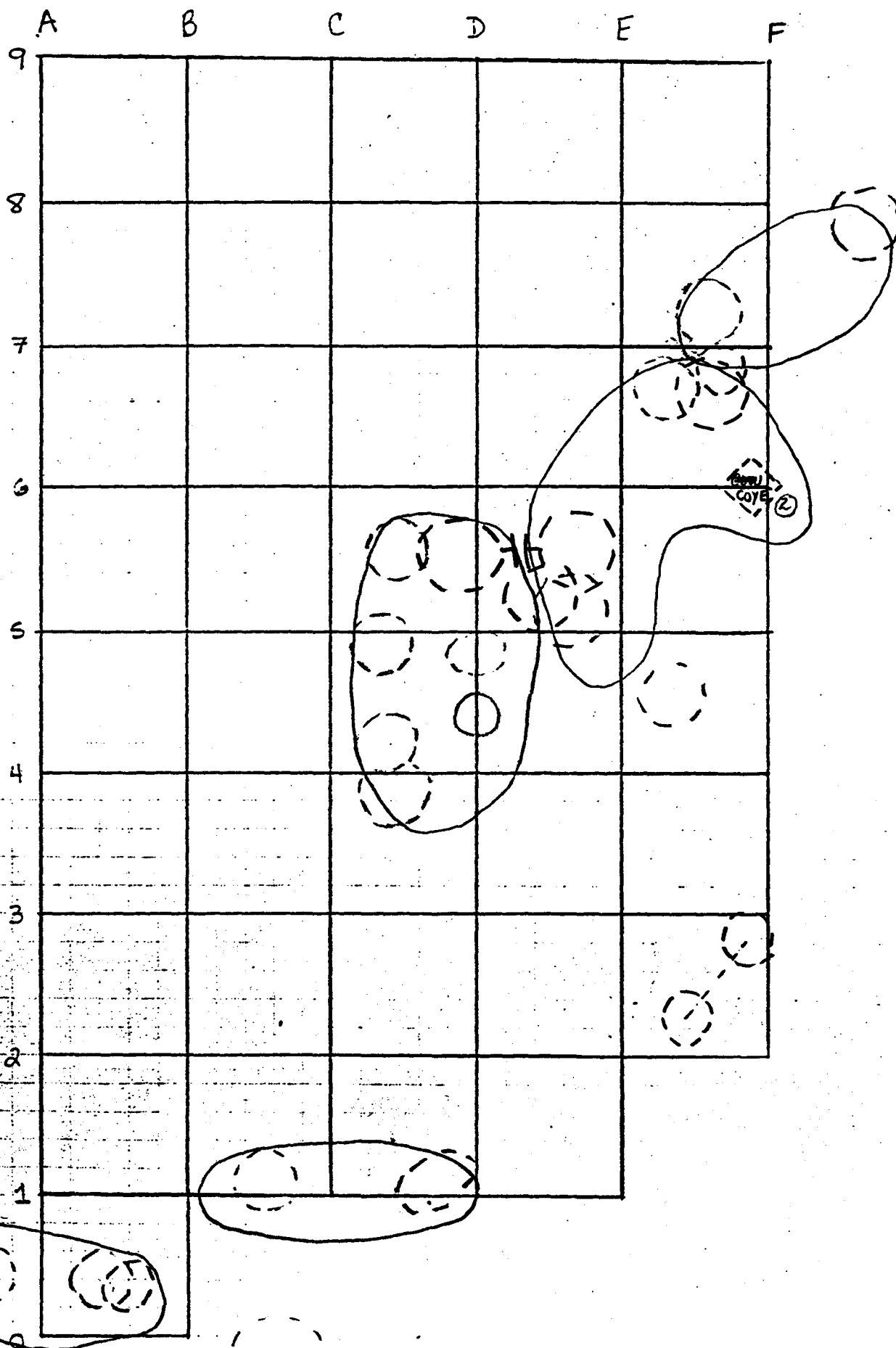
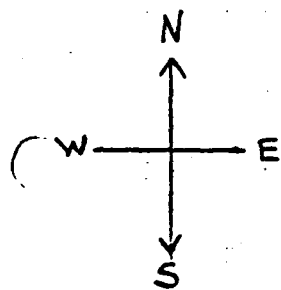
CHESTNUT SIDED  
WARBLER



0 50 m



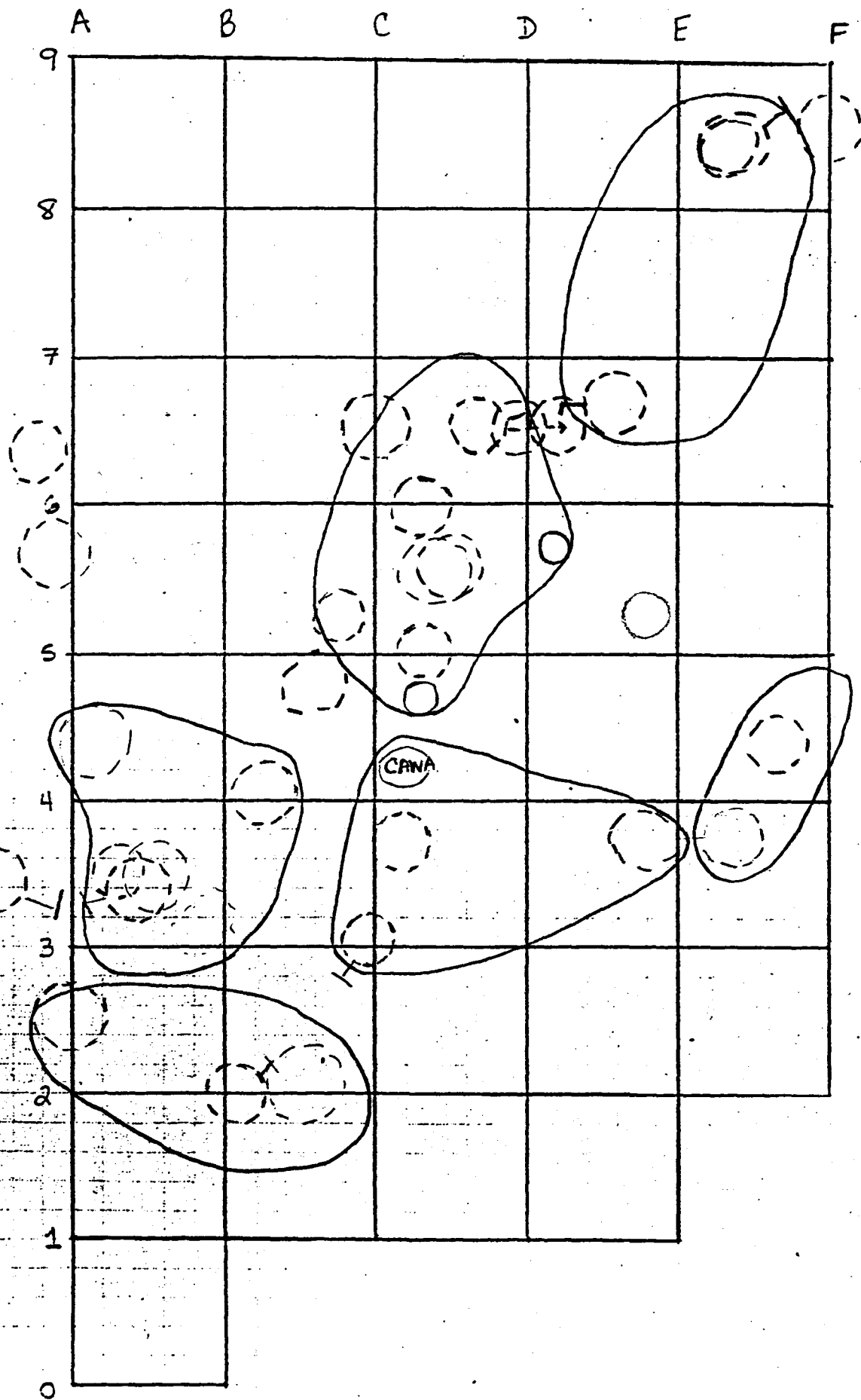
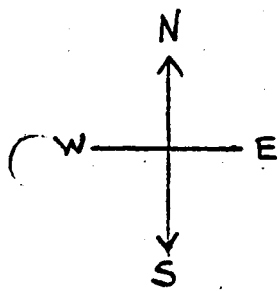
RED PINE PLOT Common Yellowthroat





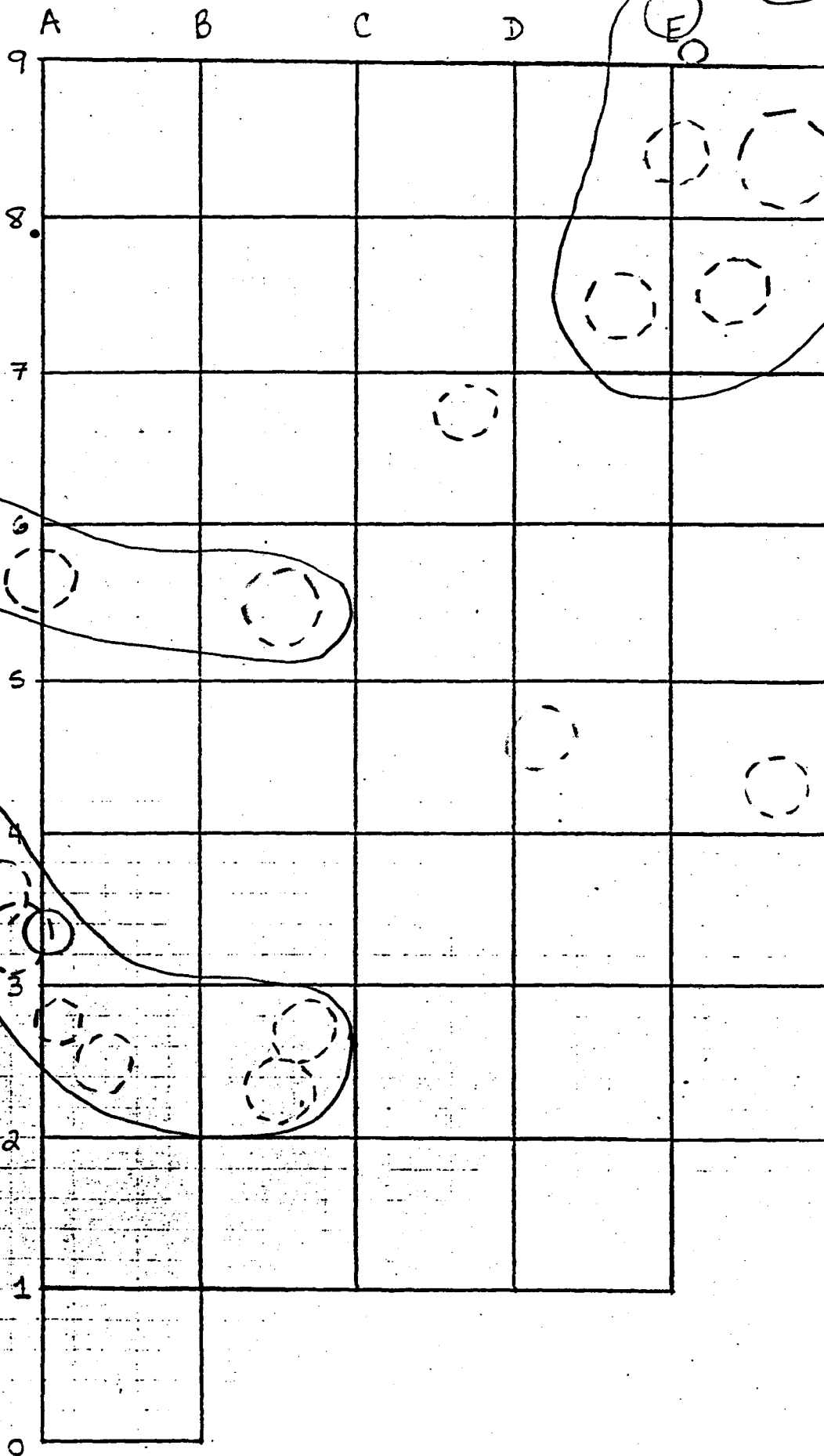
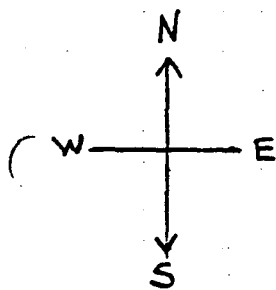
# RED PINE PLOT

CANADA WARBLER



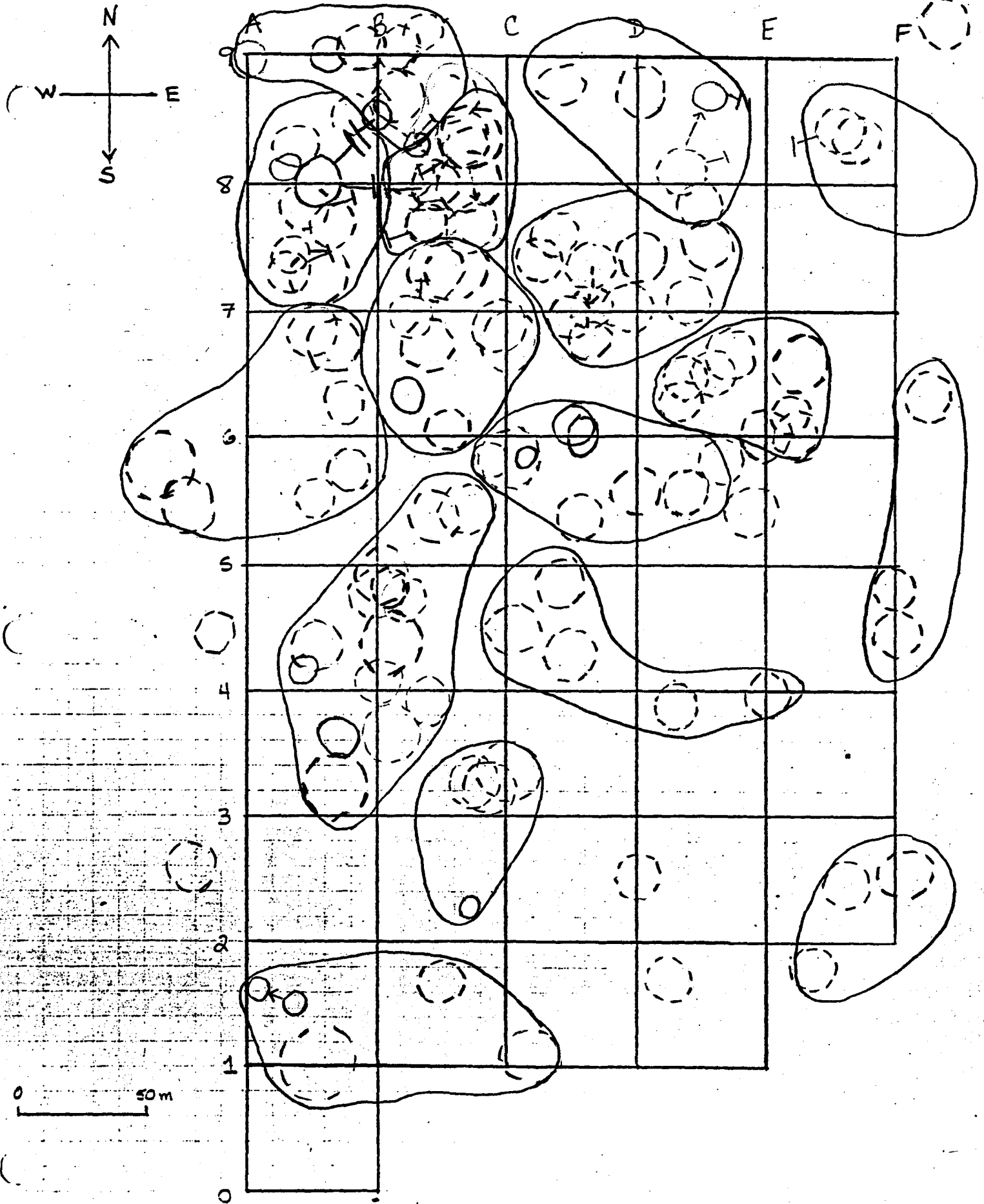
# RED PINE PLOT

Mourning Warbler



# RED PINE PLOT

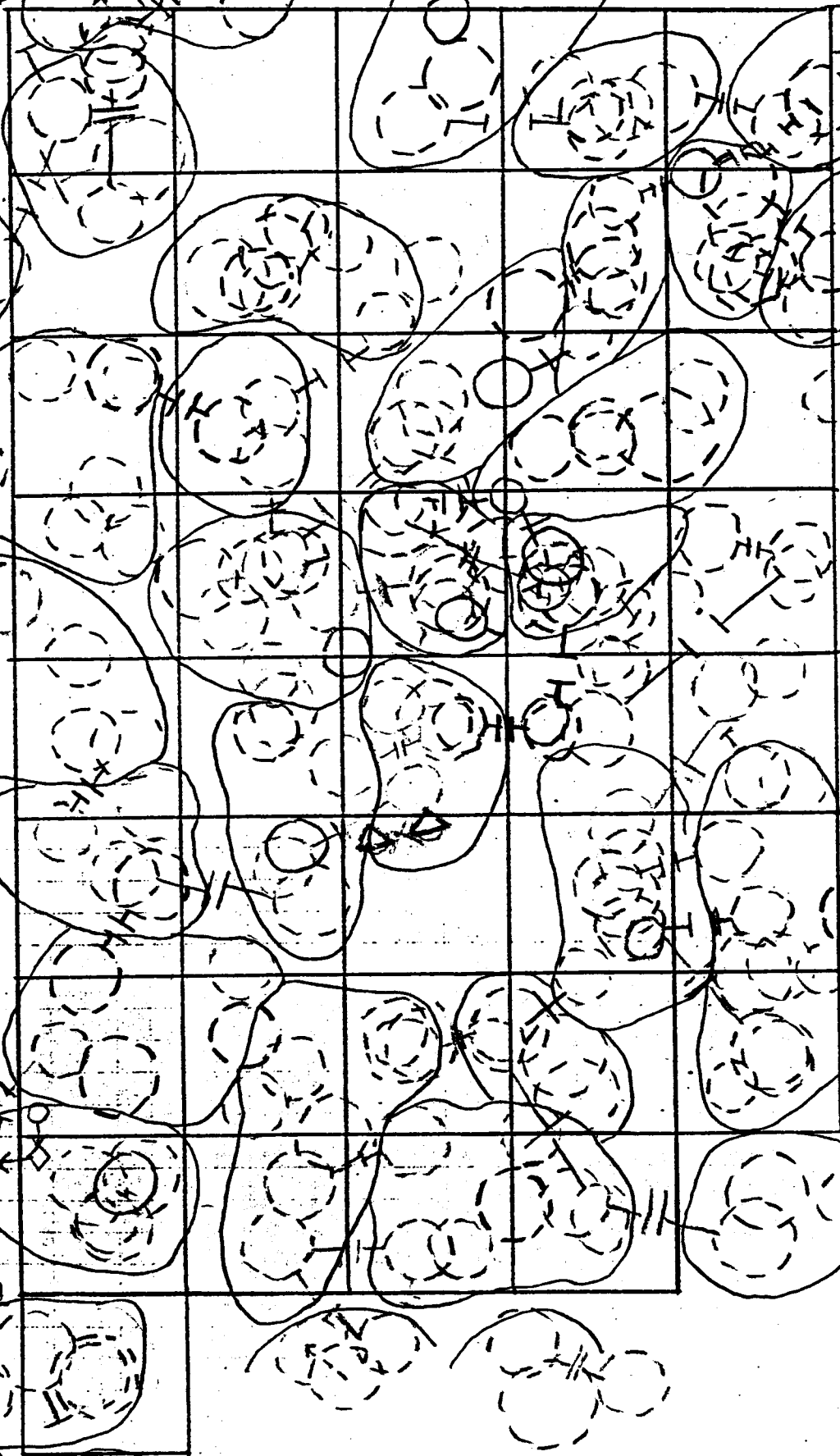
Black-throated  
Green Warbler



RED PINE PLOT

Pine Warbler

N  
W  
E  
S



0 50 m

