

## HOLT RESEARCH FOREST: USING THE GRID SYSTEM

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The Holt Forest is bounded on the east by the Back River and on the west by Sewell Pond and is divided by the Old Stage Road. The study area is located on the east side of the property and is divided into 40 one-hectare blocks. The western half of the blocks comprises a 20ha managed area where forest management is practiced, and the eastern half is a 20ha control area where no manipulations are allowed. The study area is also split north-south by a former property line, it features rusty barbed wire, fence posts, and sheep fencing along portions; the change in vegetation is noticeable.

### Grid Layout

**Blocks:** The blocks in the study area are laid out in a grid, each block measuring 100x100m (1 hectare). The block corners are marked by a white fiberglass rod topped with pink-glo paint; both the rod and pink flagging on a nearby tree are labeled with the location.

**Quadrats:** The blocks are divided into four 50x50m quadrats (0.25ha) by an iron pin in the block center. The quadrat corners at the midpoint of the block lines are marked with an orange painted iron pin labeled with a metal tag and pink flagging.

**Subquadrats:** The quadrats are subdivided into four 25x25m (0.0625ha) subquadrats by an orange painted iron pin in the quadrat center. The pin is labeled with a metal tag and pink flagging.

The grid layout is illustrated in Figures 1-1 and 1-2.

### Markings

All of the block lines have been spot marked by paint on adjacent trees. Trees along the block lines that form the boundary of the study area and along the 5/6 line between the control and managed area are painted red. The remainder of the block lines are painted white. Quadrat and subquadrat lines are marked with two thin lines from a paint gun. Quadrat lines passing through block centers are marked by double blue lines. Sub-quad lines are marked by double yellow lines.

Outside of the study area, the block lines have been extended throughout the property. On the east side of Old Stage Road, they are marked with white paint, iron pins at 50m intervals, and nails (now paved over) in the middle of the Old Stage Road. On the west side, block lines are marked with pink flagging with iron pins at 50m intervals. The boundary lines of the property are painted blue, flagged with pink property line tape, and marked with no trespassing signs. These signs are also located along the road and pond at regular intervals.

Table 1-1 is a list of these and other markings used at the Holt Forest and describes their locations and uses.

### Addresses

Each block has a unique number-letter code. Study area blocks are numbered 3 through 8 (Managed area =blocks 3, 4, 5, Control area=blocks 6, 7, and 8) from west to east and C through J from

north to south (see Figures 1-1 and 1-2). Quadrats and subquadrats are numbered 1-4 as illustrated in the figures. Hence, a seedtrap located in 3E32 would be found in block 3E, quadrat 3, subquadrat 2.

A block line is named by the letters or numbers of the blocks on either side of the line. Hence, the 5/6 line is a north-south line, and the F/G line is an east-west line. Quadrat lines are named by the blocks where they are located, e.g. quadrat line D runs east west through the study area. The north-south quadrat lines that run through the center of the blocks (3, 4, 5, 6, 7, & 8) are often called transect or census lines because they are used in transect surveys of birds and mammals. Two other sets of lines run through the study area. They are small mammal trap lines, and S-1 and S-10 lines (see Small Mammal Trapping and S-1 instructions).

Points are named by the location they represent; since corners share four locations, the following standards usually apply. The northeast block corners are the named corners except in the 3 blocks where southwest is used (e.g. NE 4F [not SE4E, SW5E, or NW5F] or SW 3F). Block and quadrat centers are named for the block or quadrat they represent (e.g. center 4E or center 4E2). Quadrat corners are midpoints along block lines and are named for adjacent blocks (e.g. 4F/5F is the midpoint of the line between blocks 4F and 5F along the 4/5 block line and is the northeast corner of quadrat 4F4; 3E/3F is the midpoint of the line between blocks 3E and 3F along the E/F block line and is the northeast corner of quadrat 3F1). Subquad corners are generally not named but similar rules would be applied.

### Access

There are five points of access to the study area from the Old Stage Road. From south to north they are

1. Primary route. An old woods road that starts behind the log house, north of the garage/office. The trail splits just south of the meteorological station opening with the northerly trail leading to the 2/3 block line just north of 2H/3H and the other trail enters the study area in quadrat 3I3 and continues through the study area to the Back River.
2. \*A woods road that begins across from the Arrowsic Conservation Area parking spot and enters quadrat 3G3. This road and the one above intersect near the center of block 6H. This trail has not been used regularly and is grown in, so other routes are preferred.
3. Line F/G, the north/south dividing line. It begins just south of a large yellow birch on the edge of the road. Line brushed and discretely pink flagged.
4. \*Line D/E; a weak path leading to NW3E begins north of a small stone wall perpendicular to Old Stage Road.
5. \*An old woods road that begins across from the residence just north of the western parcel, through the old barn site and ends in block 5C near the salt marsh.

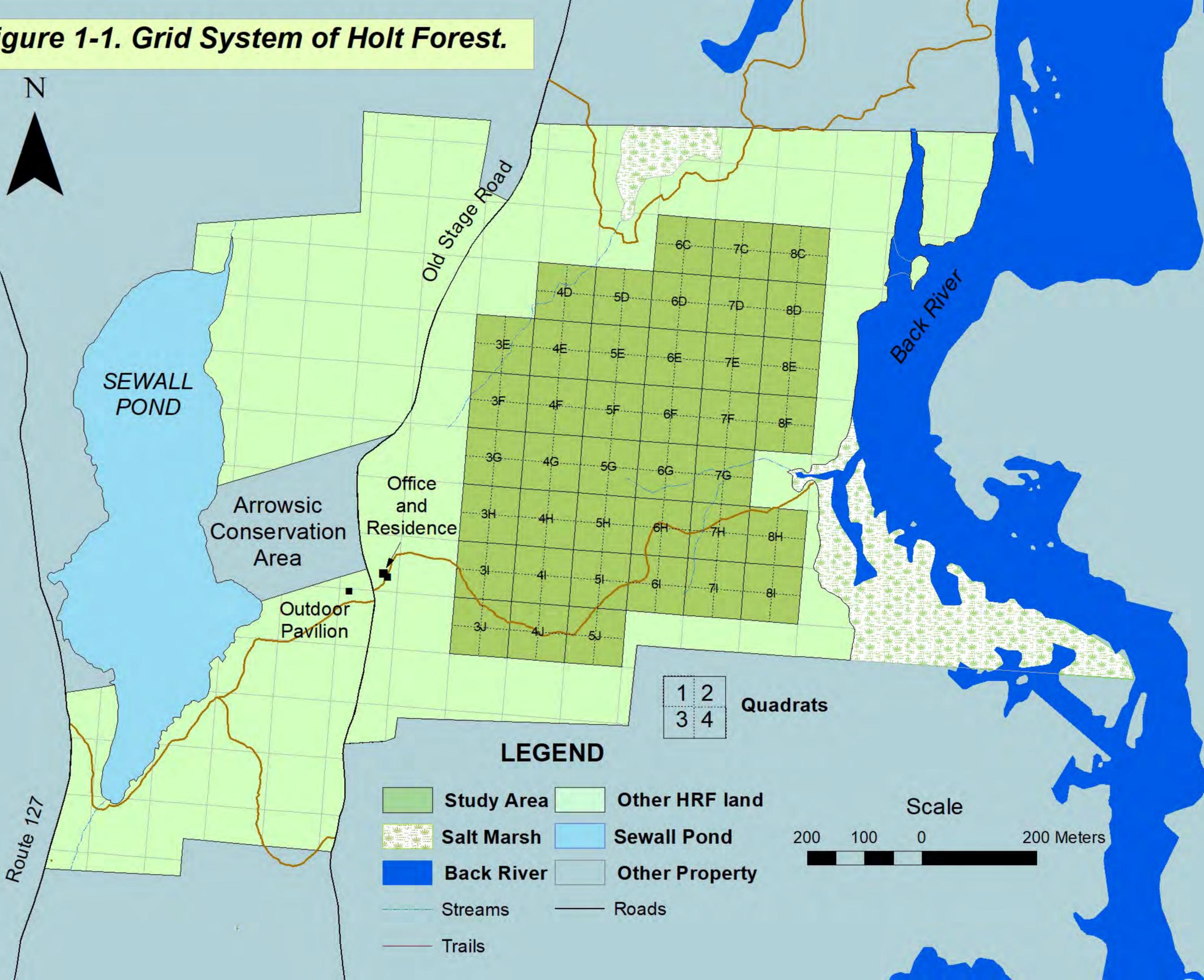
\*indicates routes that are seldom used

It is important to use these access routes and the grid system lines at all times. The block lines and the north/south quadrat lines are brushed and used for moving through the study area. These are the only lines to be used for traveling in the study area (There are some exceptions). Walking off these lines results in trampled vegetation and can harm ground-nesting birds.

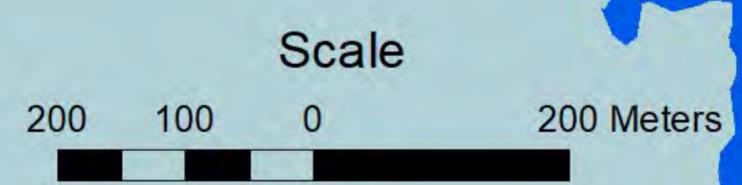
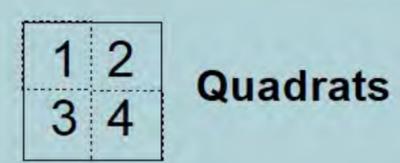
Table 1-1. Markings in the Holt Research Forest.

Marker	Locations and Use
white fiberglass rod	block corners (topped with pink-glo paint)
iron pins (3/8" rebar)	block line midpoints, block centers, quadrat centers, (pin tops painted orange)
red and orange flags (metal stakes)	north and south edges of S-10 plots at 5m intervals and N, S, E, W of quadrat centers representing the 4m <sup>2</sup> regeneration plots
orange flags (plastic stakes)	in 6H4 marking plants used in a discontinued in phenology study
pink flags	location of individual plants for reproductive effort study, south of S-1's and along 3 and 8 lines.
pink flagging	block corners and midpoints, quadrat centers, census lines, lines outside study area between blocks
orange flagging	with wood stakes for frass card stations, mark trail for S-1 lines.
orange and black striped flagging	small mammal transect stations
red plastic stakes with metal tags	small mammal trap stations
red brushed lines	edge of the study area and dividing line between managed and control (line 5/6).
white brushed lines	block lines exclusive of red lines
blue brushed lines	property lines
painted double blue stripes	quadrat lines includes brushed N/S census lines and not brushed E/W lines
painted double yellow stripes	subquadrat lines
pink and black striped flagging	hazards, such as stinging insect nests, small mammal assessment line stations
blue flags*	centers of mapped gaps
blue flagging*	south end of mapped gaps
green flags*	nest predation study, nest location
yellow flags*	nest predation study, indicates nest nearby
yellow flagging*	nest predation study, marks yellow flag
green flagging*	extension of nest predation transect outside study area
tall pink flags*	fruit production lines at 2m intervals
tall orange flags	Sample locations for 1m <sup>2</sup> relevé plots
killer tree flagging	hazardous trees, hanging branches, etc.
property line flagging	property lines
* indicates uses that have been discontinued, markers not removed	

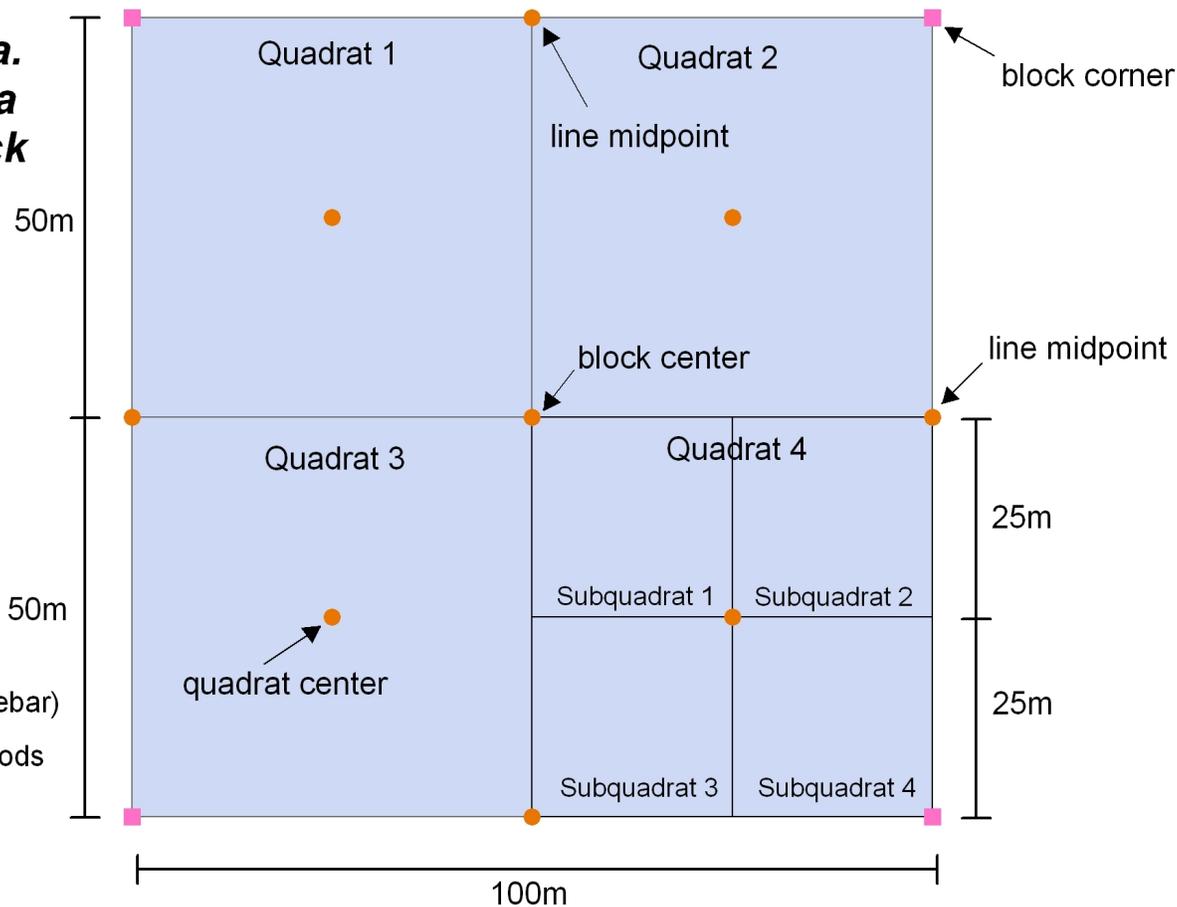
**Figure 1-1. Grid System of Holt Forest.**



- LEGEND**
- Study Area
  - Other HRF land
  - Salt Marsh
  - Sewall Pond
  - Back River
  - Other Property
  - Streams
  - Roads
  - Trails



**Figure 1-2a.**  
**Layout of a study block**



**Figure 1-2b.**  
**Layout of 4 adjacent study blocks (6H, 7H, 6I, 7I).**

