

STUDENT REPORT

WOODCOCK BANDING PROJECT

MOOSEHORN NATIONAL WILDLIFE REFUGE

1974

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## INTRODUCTION

This is a report on Woodcock related activities undertaken at Moosehorn Refuge in the summer months of June 10 to August 31 of 1974. This report also includes what activities should be in store for the woodcock banding project at Moosehorn in 1975.

Following are a few general comments for next year's crew:

1) All records should be neat, accurate, complete, and concise; all observations should be promptly recorded--a person can rely on his memory for certain things but, if he doesn't record observations, once he's gone, so is all the knowledge he has acquired.

2) All equipment should be kept in top shape always. When a problem arises, fix it as soon as possible. Small which are let to stockpile become one big job which usually has to be done when there's no time to do it. If axes are left unsharpened, hammers misplaced, stakes left crooked, net holes unmended, or batteries uncharged, capture success will be adversely affected.

3) This is a woodcock refuge. If anything is needed to make woodcock capture more efficient, ask for it. There is no one stationed here specifically for the woodcock project so that Ed, Stan, Helen, Mert, Alton, and Millard have been substituting this summer. They have always been willing to help in any way, shape, or form with any reasonable request that was put forth to them. If equipment, tools, or refuge machinery is needed or sought, the refuge personnel will know what has to be known to get things done. Take advantage of this fact but don't take it for granted--they can all be good friends as well as good help in the work that has to be done.

4) Be prepared to work more than a forty hour week the first few weeks here. The installation of traps and nets takes much time and should be done as soon as possible. There is often much rainy weather at the beginning of the summer; this should be taken advantage of to do as much early nightlighting as possible. The dark of the moon should be taken advantage of also if it occurs early in the summer--or any time it occurs. With all this activity

going on, it is easy to overshoot the "forty-hour standard work-week". It should be kept in mind, however that as the summer goes on, the work week will get shorter and shorter. It is therefore to the advantage of the woodcock crew to set up as quickly as possible even though the forty-hour week will be exceeded.

5) Orientation is a very important aspect of the program. Working at the refuge is not just a chore to be over and done with. The woodcock is a very unique bird and a very interesting bird; the more that is discovered about it, the more fascinating it becomes. Get to know as much about the bird as you can so that you can relate your work to the bird's activities. Know how to age and sex woodcock with extreme accuracy-- aim for one hundred per cent. The only way the data can be valid is for the data to be correct. Even though you are no longer a neophyte, you still have the responsibility to the rest of the crew and to the project to do the best that you can possibly do.

#### EDMUNDS 1974

In the years before 1973, both the Edmunds and Baring units of the refuge had woodcock banding programs. However, when the amount of data collected, the money spent, and the amount of personnel used were considered, the program at Edmunds was abandoned and a concentrated effort was started at Baring.

In 1973, even though there was no program at Edmunds, the traps were left in the woods due to lack of sufficient manpower to remove them and due to increased emphasis on other phases of the banding program at Baring. In 1974, the use of a five-man crew made it possible, with the help of the Youth Conservation Corps (YCC), to remove from Edmunds all trap wire. All traps were rolled, removed, and stored outside the storage building off of Headquarters Road. All of the trails were flagged and stakes were left as site markers where each trap had occurred. A map of the Edmunds unit

(map I) has been included to indicate the locations of all the trapped areas. Table I indicates each trap line with respective number of trap sites. Also included on the map are the mist netting and nightlighting fields. Trap lines are indicated in ~~red~~<sup>blue</sup> and fields in green.

Table I: Traplines and numbers of sites per line on the Edmunds unit before the 1974 removal.

Trap line #	Number of sites
1+5	32
2	17
3	20
4	8
6	10
7	16
Total	103

#### BARING 1974, 1975...

##### Trapping:

For most of the summer of 1974, eighty-seven traps were in operation on six different trap lines. These trap lines are indicated on the Baring map (map II). Three new trap lines were added and three old lines were modified to make them more suitable for next year. Table II indicates the traplines and the number of traps they each had if used in 1974 and the number of traps they will have if used in 1975. There should be approximately 157 traps operated in 1975. The order in which they are set makes no real difference. The three new trap lines are located along Howard Mill Road, accross the Magurrewock dike, and accross from Lane Construction. All have been flagged and trails recently cut-- they should be easy to find.

Table II: Traplines and numbers of sites per line on the Baring unit in 1974 if used and in 1975 if used.

Trap line #	Number of sites in 1974	In 1975
1	13	13
2	--	10
3	--	13
4	22	22
5	13	13
6	15	15
11	13	17
12	11	11
14	--	10
15	--	10
16	--	23
Total	87	157

Following are a few important comments concerning the trap lines:

- 1) The earlier the traps are set, the better the chances of capturing broods and the more birds will be captured overall.
- 2) The importance of well hoed out sites and good sets cannot be overemphasized. It is always frustrating to work hard to capture woodcock and then find that a poor set has caused the loss of two or three birds at one site. This can only be avoided through the diligent practice of putting in the trapsites right. Funnel openings and distances from lead to trap are both critical in guiding a bird into the trap. Trap tops should cover the trap completely and no holes should exist. Traps should be firmly anchored to the ground as should trap leads, short leads, and funnels. Hoed out areas should not be stepped on at all-- compaction of the soil makes a trap site uninviting to a potential bird. All surface vegetation,

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roots, and rocks should be removed from a hoed out area. When putting in sites, as little overstory vegetation should be disturbed as possible. This keeps trap sites from drying out later in the summer. The extent to which these suggestions are followed will determine trapping success. Sloppy sites will invariably lose birds.

3) In setting up a trap line, it is easier to follow a two-step procedure for quickest and most efficient results:

a) Hoe out all sites and set up leads, traps, and funnels on one trap line.

b) Cover all traps with tops after a line is done. Record which traps are set and keep the data for future reference. Also record which cells of which trap are set.

4) Trapping twice a day is a necessity. Otherwise, predators figure out that a trap means a free meal or stumble on easy prey in the traps. We tried trapping once a day in the first week of the 1974 summer with the result that four or five woodcock mortalities occurred. Over the rest of the summer (nine more trapping weeks) approximately the same number of mortalities occurred as in the first week -- however, we were trapping twice a day.

5) Trapping should be done as late in the morning and yet before lunch as possible. This was done in the latter part of this summer with significant results. Before it was done and trapping was started early in the morning, many flushes occurred-- most of them near the traps. As a result, the trapping success started to decline. When the traps were done later in the morning, success went up and fewer birds were flushed. Perhaps because of this, the traps did not slack off at the end of the year as they had done in the two previous summers I was here.

6) Notify Stan and a YCC higher-up that if any flowages along the Charlotte Road will be affected by any refuge activity, the woodcock crew should be forewarned. This year, whenever Mahar Brook went

up because of the removal of beaver debris, trapline 1 flooded out. There was the possibility that a bird could have drowned in the traps as the traps were completely covered with water. A quick check of the lines before the flooding would be a good precautionary measure.

#### Equipment:

- 1) Trap cells and leads are near the storage building off the Headquarters Road.
- 2) Trap funnels and short stakes are stored on reinforcing rods in the smaller woodcock storage shed.
- 3) Trap tops are stored in green trunks in the smaller woodcock storage shack.
- 4) String to repair the trap tops is in the garage-- this string should be carried along with the trap tops so as to have it handy when it is needed.

#### Mist Netting:

Following are some items which should be kept in mind in mist netting:

- 1) Nets should be taught enough to hold the heavier, horizontal ropes straight across between the two mist net poles. The nets should be tight enough so that these lines don't sag, but not much tighter.
- 2) When taking birds, avoid cutting strings as much as possible--patience is the key. If any holes do have to be cut, they should be repaired immediately.
- 3) Nets which have become loose should be tightened as soon as possible before netting again. It is the responsibility of each individual to make sure that the nets he handles are in proper working order. If each individual takes it upon himself to check his own work, all should go smoothly.

4) Double check to make sure that all nets are put up and rolled<sup>\*</sup> after every night's use. If any nets are accidentally left down, the result will be a net full of dead woodcock and songbirds.

<sup>\*</sup>Netting Policy: Since I have been here (the past three summers) two different methods have been used to put up nets in the fields when they were not in use. One way is to roll the nets on the poles; the other is to furl the nets. There are a few disadvantages to furling the nets and there are a few advantages to furling them. The same goes for rolling the nets. When nets are furled and the wind blows, it often happens that some of the net will unfurl and create hazards for passing birds--especially night-time flyers. Also, when nets are furled, they form a visible obstacle to flying woodcock. The birds must then either fly over or under or around the nets to avoid them. Since the nets are there seven days a week, the birds may set up flight patterns which will take them out of the area of the nets. The result is that, even when the nets are down and can't be seen by incoming woodcock, the birds are in areas where the nets aren't or the birds are flying high--out of force of habit. The advantages of furling the nets are that it takes less time to put the nets down and take them back up. It is also less likely that a net will become entangled in the furling process than in the rolling process. However, as long as care is used in rolling and unrolling the nets, there should be no problem with this method. The important point is that rolling the nets probably has much less effect on the flight patterns of the birds. If one must make the comparison between time lost to rolling nets and birds lost due to changes in flight pattern caused by furled nets, I think that one must opt for the increased capture success that goes along with rolling the nets. The netting success also seemed to decrease much less when the nets were rolled.



5) Netting in the rain is allowable and sometimes desirable. The cloud cover makes it harder for the birds to distinguish the nets against its dark background. The flight seems to last longer when there is cloud cover, although this is not a hard and fast rule. If it should start to thunder and lightning should start to appear, it is a good idea to get out of the field fast-- when you're hanging around lightning rods, it is suicidal to stay when an electrical storm comes along. Even if the nets have to be left down, the choice between yourself and a few birds is evident.

#### Fields:

Throughout this summer, the fields netted most extensively were areas 1, 10, 2, and 7. These areas, and all other areas-- potential and otherwise-- are located on map II.

Another field, area 200, was netted in the tail-end of the summer. It yielded five birds the first time it was netted and didn't catch another thing the rest of the summer even though some birds were seen to fly through the area. It should be netted again next year as it seems a good area-- it would probably yield more birds if it were netted earlier in the season.

Field 1 had good success in the beginning of the year and petered out later in the season. Its success was much less than last year and the year before. It seems to be growing over with sweet fern, spreading dogbane, and goldenrod. This may have caused the birds to use the field less; the field will be completely cut over either this fall or this spring to try and stop the incoming shrubs from taking over the field.

Field 10 also had good success early in the year but also decreased in success later in the summer. It too is growing over and so will also be cut. A new mist net placement pattern is suggested in Fig. II. This pattern is suggested after repeated attempts by our crew to find a pattern which will adequately cover the field. This pattern seems the best and should be kept in use one season unchanged to see how it fares.

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Field 7 had an amazing year. It was the best netting field we encountered this summer. Last year, some of the incoming alders and aspen were cut out of the field and success increased greatly. This year, the rest of the alders were cut and chipped and the field looks like it may get good usage next year. As compared to last year and the year before, its netting success doubled this year. This has happened while the success in other fields has gone down. Unless there has been a population shift towards the field 7 area (which doesn't seem to be the case since our trapping data indicates a similar shift to a completely different area of the refuge), then it seems safe to say that the cutting done in the field had a very beneficial effect on usage and flight behavior.

Field 2 had a year slightly poorer than last although it was consistent throughout the summer. It too was getting grown over with shrub aspen and birch. With the permission of Georgia Pacific, the field was cut over. Next year should tell if our cutting efforts were worth anything.

Other fields were checked out for netting possibilities. Areas 17 and 77 near Ray's Mobile Homes on Rte. 1 just off the refuge, grown up in goldenrod and hay, yielded no birds--none were observed to fly over or near the area. This was the case even though the fields were checked at the peak of the netting season.

The Rod and Gun Club field, area 201, was checked and one bird was observed to fly out of the south branch of the field. It was checked late in the season and should be checked again next year earlier in the summer for possibilities of netting or lighting.

Areas 104 and 28 on Rte. 191, in the proximity of Hanson's Road, were checked a little late in the season. Area 28 had a substantial number of birds flying through but they were all flying twenty to thirty feet high. Area 104, a very large area, had quite a few birds flying through it also but many were setting down in the

field. Since the field is so large, however, it might be better suited to nightlighting because the battery of nets needed to cover the field adequately would be prohibitive. Both fields should be rechecked earlier in the summer.

#### Equipment:

- 1) Mist net poles are stored in the larger woodcock storage shed in the attic.
- 2) Extra mist nets and mist net stakes are in the smaller woodcock storage shed.
- 3) Mist net tape is electrical tape which can be gotten in the office.
- 4) Mist nets should be ordered a year in advance as they take a while to get here. See the refuge manager about this.

#### Night Lighting:

Following are a few items which should be kept in mind for nightlighting:

- 1) All batteries should be kept charged. See Mert or Stan for instructions on using the battery chargers before fooling around with twenty dollar batteries. Make sure that they're never overcooked.
- 2) All nets should be hole-less-- if repairs are necessary, make them right away.
- 3) Quiet is the key to successful capture techniques.
- 4) Cooperation and toleration of the other guy's mistakes are both indispensable.
- 5) Crews should be three man, two man, or four man. There should be as many as or more lights than nets. If there are more nets than lights, one man is wasting his time out there. If a five man crew is inevitable, three people should have lights.

### Fields:

The fields lighted throughout the summer were areas 1, 10, 11, 20, 36, 39, and 40. Strips were cut in areas 1, 10, 39, 40. This made the walking quieter, made the birds more easy to see, and made for better orientation. The result was a higher rate of success and fewer man-hours per bird than would otherwise have been expended had the strips not been there.

Fields 1 and 10 yielded excellent success early in the year but petered out in mid-August. Some of the lighting expeditions revealed that there were no birds at all in the fields; the reasons are not known.

In areas 39 and 40, success was marginal, but the short time it took to cover the fields warranted their use. These fields were also consistent in their yield throughout the summer.

Field 36, on the woodcock trail, was hard lighting but it did yield a fair number of birds for areas their size. The field is growing up in aspen and should, if at all possible be cut over.

Area 11 and area 20 both had strips cut in them. Area 11 was lighted with the scout on several occasions. This is perhaps the most efficient method of capture on the refuge. The only problem is that no woodcock crew member is allowed to drive any refuge vehicle. This means that the scout can't be used unless a person working for the refuge who has a federal license consents to drive for the woodcock crew. The policy this year has been to notify a Visitor's Center personnel of the situation. It was then up to him to decide whether or not he wanted to drive. If he did then the woodcock crew would go out with him and show him exactly what was expected of him--to drive the scout in low-range-low at the slowest speed possible along the middle of the strips mowed in area 11. Area 11 was also lighted on foot several times when a person from the Visitor's center could not be contacted; The success was slightly less but it was still worth the effort. Area 20 was mostly lighted on

foot and some success was achieved in capturing birds flushed into the area from field 11. The strip of Red Pines below area 11 is also designated as area 11. The John Deere lawn mower was used to cut strips between every other row of pines-- the number of birds captured in the area made it a valuable lighting field.

The power lines, area 31, on the Barn Meadow Road were lighted later in the season and no birds were encountered. The area should be tried again early next summer.

Other areas which should be checked early in the season next year are fields 28, 104, and 201.

Areas 100, 101, 41, 21, and 22 were not checked this year because they yielded no success last year. They should be checked next year, however, early in the summer to see if woodcock use has not changed in those areas.

#### Equipment:

1) Batteries and alligator clips, lights, and extra, unused batteries are in the shop. They and the car-top carrier that goes on the scout hood during its lighting use are near the side entrance of the shop.

2) Headlamps are in the larger woodcock storage shed in one of the file drawers. Extra batteries are in the office-- ask Stan or Helen where to get them.

3) Extra bulbs for the nightlights are in the smaller woodcock storage shed. Old, unusable nightlights may have to be disassembled to get the extra bulbs. Whenever new bulbs are inserted, the light should be oriented so that it is horizontal when the light is held in its most comfortable position.

4) On the scout, there should be a safety bumper made out of wood and covered with sandpaper. This bumper is already assembled and if it is not on the scout, it is probably in one of the storage buildings. Ask Mert or Alton about it. There are also two green

mats upon which the lighter and netter sit. These are with the car-top carrier in the shop. On the car-top carrier, there is attached a signal light used to alert the driver when the lighter has spotted a bird.

#### General Field Usage:

This year, with a five man crew, we were able to see the effects of overusing the netting and lighting fields. Often times the same field was used three times in one week. Success was greatly reduced and it was found that the extra number of birds caught by doing the fields more often did not make up for the birds lost due to overuse of the fields and decline in success. For this reason, a five or six day rotation should be adopted and stuck to religiously. It becomes very tempting to do the fields more often, especially when the success is high. Remember, however, that doing the fields more often upsets the birds' flight patterns, a situation which should be avoided. When the fields are set in a five or six day rotation, other fields can be checked out earlier in the season than would otherwise be possible.

If strips are to be cut in the fields, Stan is the man to see for use of heavy equipment. Let him know what has to be done ahead of time and he will see to it that it's done. The same goes for fields that have to be mowed. If the areas 100 and 101 will be checked out, strips should be cut in them since there is little variation in cover in these fields.

#### Permissions:

People to contact for the use of netting and lighting fields are in the following list:

Area 2: Mr. Oscar Saline (Georgia Pacific)

Extension 217 @ 4273311

Area 200: Mr. Alton Sawyer-- Refuge personnel

Area 104: Mr. Stewart Hanson

Route 191

Personal contact is necessary to gain access to this field. Go easy with this guy-- he plays hard to get along with but if you get to know him, he's all right. Remember that you are functioning as a representative of the refuge and act accordingly.

Area 201: Ask Alton Sawyer who to contact from the Rod and Gun Club for use of the field.

Any other area which needs permission to be used should be recorded and stored for future reference.

### CONCLUSION

It has been a very good summer for woodcock at Moosehorn. Our efforts became frantic and frustrated at the end of the year due to a drop in field usage but the trap lines held out well throughout the summer and a near 400 birds were banded. The past three summers have all been fairly productive relative to the efforts exerted-- perhaps due to the mild winters that have occurred in the past three years.

Next year's crew will have nearly double the number of traps spread over the refuge, covering more woodcock habitat, and capturing a more representative sample of the refuge population. A few more promising fields were found this year and more checking out next year should prove interesting. Most of this summer was spent laying the groundwork for a more extensive banding program at the Baring unit. All traps were removed from Edmunds and the wire acquired was used on the three new trap lines put in this year. New fields were checked and some were found to be promising. With any luck, it should be possible to capture between five and six hundred new birds next summer on the refuge.

There are a few problems which are constantly encountered in the pursuit of the woodcock. A main problem is that much habitat is being grown over and succession is taking its toll; this is not so much a problem as that nothing is being done about it. Woodcock are

not being managed for and yet when one manages for woodcock, one inevitably manages for other species too. Providing varied habitat through cutting, burning, bulldozing, and grazing would do the refuge's wildlife much good.

Old fields are growing up into aspen, birch, and alder. It took our crew two weeks with a chain saw and axes to put two of our fields back into shape this summer. The areas cut over were 2 and 7, some of the best night cover on the refuge. Some of area 40 was also cut, but the field is still not in good enough shape to be used successfully. If the fields are let go, succession creeps in, and neither bear nor deer nor woodcock will use them. The mowing of some of the fields will be undertaken this fall in hopes to set back some of the succession. Cutting, however, will not be enough. For some reason, woodcock don't like goldenrod fields; they do like blueberry fields. The only way to keep goldenrod, spreading dogbane, and sweetfern out of the fields is to burn-- ask any blueberry harvester.

Some of the alder cover is succeeding into aspen-birch-tamarack cover and this too is doing no good for woodcock. Neither does an overmature, even-aged stand of alder do much for woodcock. On trap line 5, a line which had 15% of the traps, 25% of the trapped birds were caught. This is in no small way due to the strips cut in the alders this past fall. Regeneration in the strips is now four to five feet high. The birds use the strips as night time cover and it's just a short stroll to day-time cover from the strips. We found that the birds used the strips at night by nightlighting the area. We decided against making a habit of it since regular lighting efforts in the strips might upset the birds' trap use and trap success in the area.

Overall, the woodcock program is doing well. If woodcock were managed for ( or, for that matter, if wildlife were managed for), on this woodcock refuge, future prospects would be much brighter.



The following section contains tables and figures of relevant data collected this summer. Tables III, IV, and V contain the last four year's capture success. The overall trend seems to be that effort per bird was going down from 1971 to 1973. This summer, however, the effort per bird has gone up in all phases of capture.

Table VI is the compilation of the data necessary to calculate a regression curve which will determine the population. From a regression curve, the number of birds not handled at all (the ones we didn't catch) can be extrapolated. Then, the sum of the birds not handled plus the birds handled only once plus the birds handled only twice plus...plus the birds only handled six times will yield the total population. This method can be used for all age-sex classes if there is enough data. The only way that this method can work is that there be enough repeat data to make the curve accurate enough to extrapolate-- the more data on repeats, the better. Hence the importance of placing a bird in its proper age-sex category cannot be overly stressed.

Figures I, II, III, IV, and V are mist net placement arrangements which are firmly established as the best found so far or are suggested placements for next year.

TABLE III: Trapping success of the Baring unit in 1971, 1972, 1973, and 1974.

Year	Trap nights	# birds	Trap nights/bird
1971	8847	222	39.8
1972	6824	195	35.0
1973	2895	153	18.9
1974	5377	214	25.1

TABLE IV: Netting success of the Baring unit in 1971, 1972, 1973, and 1974.

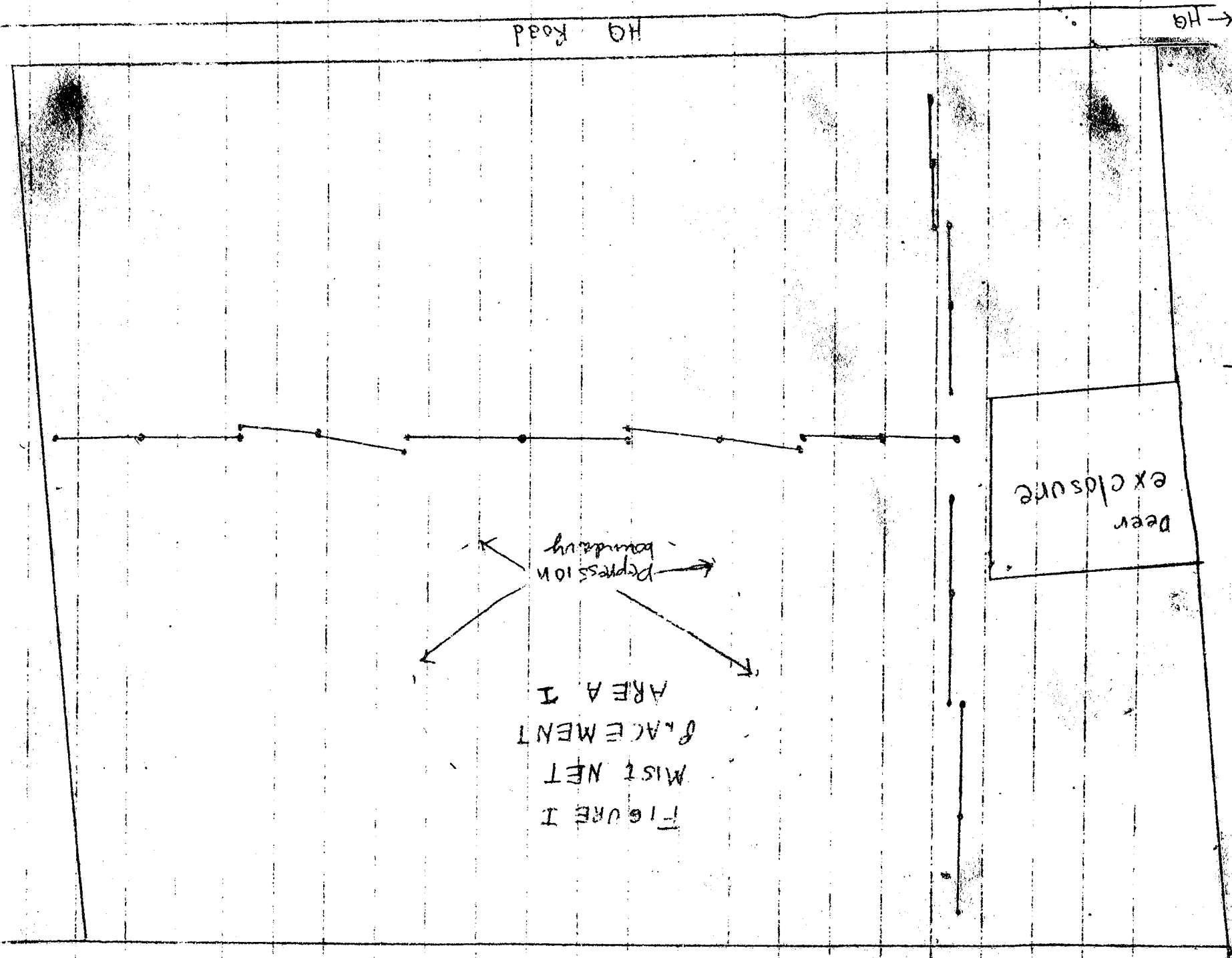
Year	Net nights	# birds	Net nights/bird
1971	548	78	7.0
1972	774	215	3.6
1973	416	158	2.6
1974	1104	188	5.8

TABLE V: Nightlighting success of the Baring unit in 1971, 1972, 1973, and 1974.

Year	Man-hours	# birds	Man-hours/bird
1971	132	84	1.50
1972	153	122	1.25
1973	99.5	121	0.82
1974	173.5	193	0.90

TABLE VI: Number of times woodcock were handled on the Moosehorn Refuge, Baring unit, in 1974. Data to be used for the population regression.

Age-Sex	# birds handled once	# birds handled twice	# birds handled three x	# birds handled four x	# birds handled five x	# birds handled six x
HY-M	124	49	14	4	4	2
HY-F	96	25	4	3	1	--
SY-M	19	6	--	--	--	--
SY-F	14	5	1	--	--	--
ASY-M	6	2	--	--	--	--
ASY-F	18	4	2	--	--	--
TOTAL	277	91	21	7	5	2
AHY-M	25	8	--	--	--	--
AHY-F	32	9	3	--	--	--



HQ Road

deer enclosure

depression

AREA 1

FIGURE I  
MIST NET  
PLACEMENT

boundary



HA Road  
 Suggested mist net placement  
 for Area 10 in 1975 + subsequently  
 based on 1974 flight observations



South Trail

Water Brook

FIGURE 1  
Area 7  
Mist net placement

apple tree

Old Fire Line

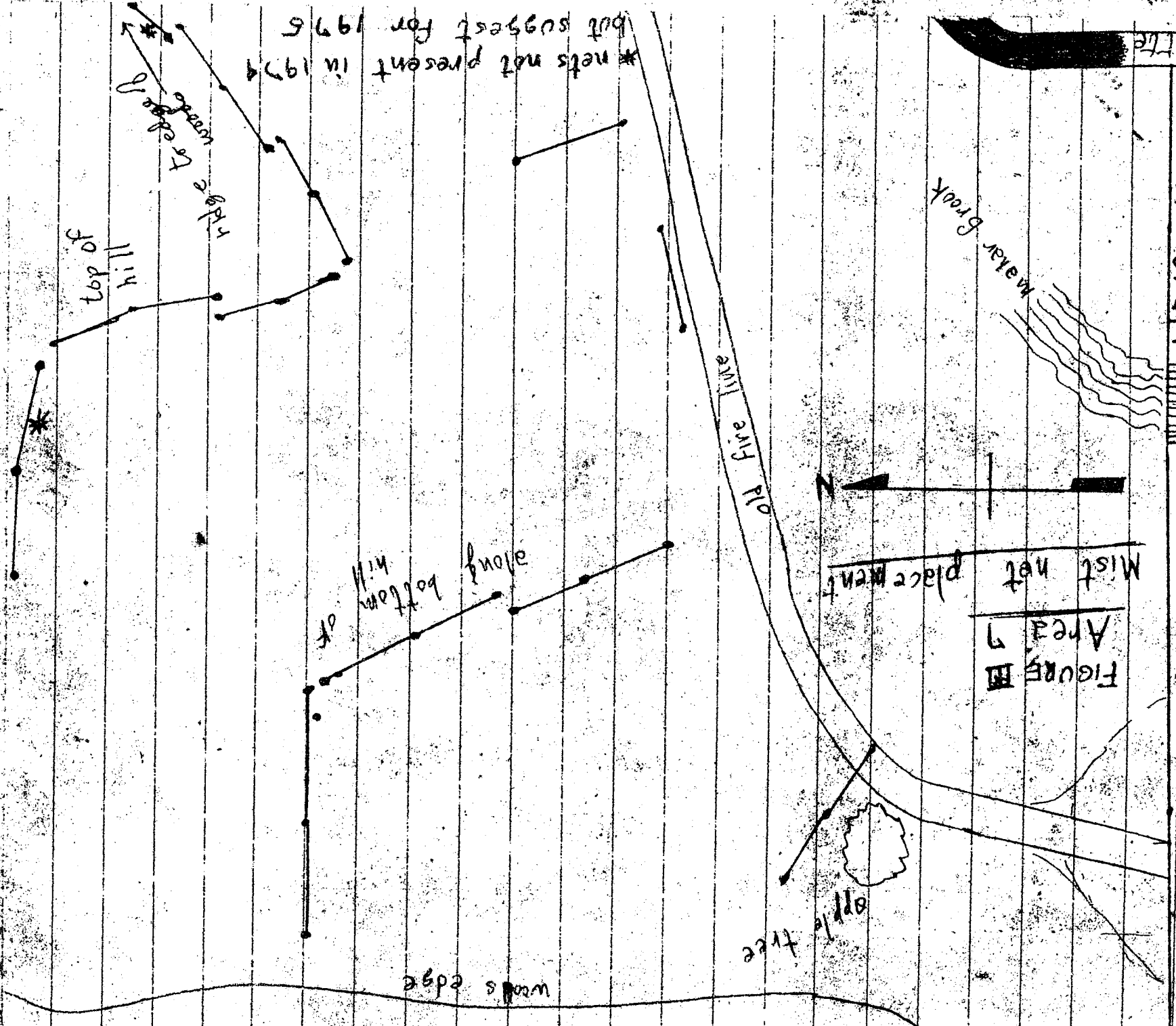
woods edge

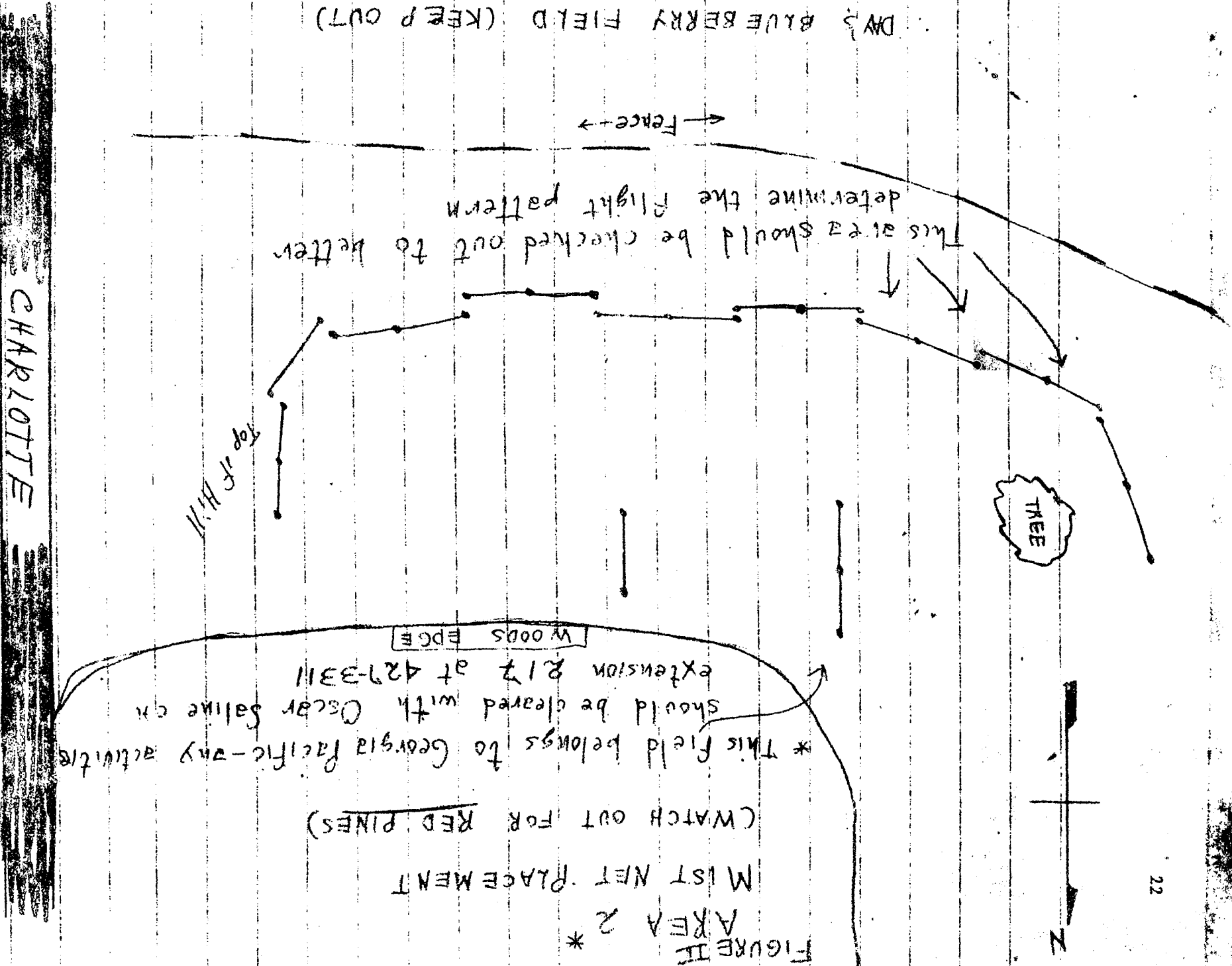
along bottom of hill

top of hill

woods edge

\* nets not present in 1974  
but suggest for 1975





DM'S BLUEBERRY FIELD (KEEP OUT)

FIGURE II  
AREA 2 \*

MIST NET PLACEMENT

(WATCH OUT FOR RED PINES)

\* This field belongs to Georgia Pacific - any activities should be cleared with Oscar Saline on extension 217 at 427-3311

WOODS EDGE

Top of Hill

This area should be checked out to better determine the flight pattern

Fence →

CHARLOTTE

Heath  
area

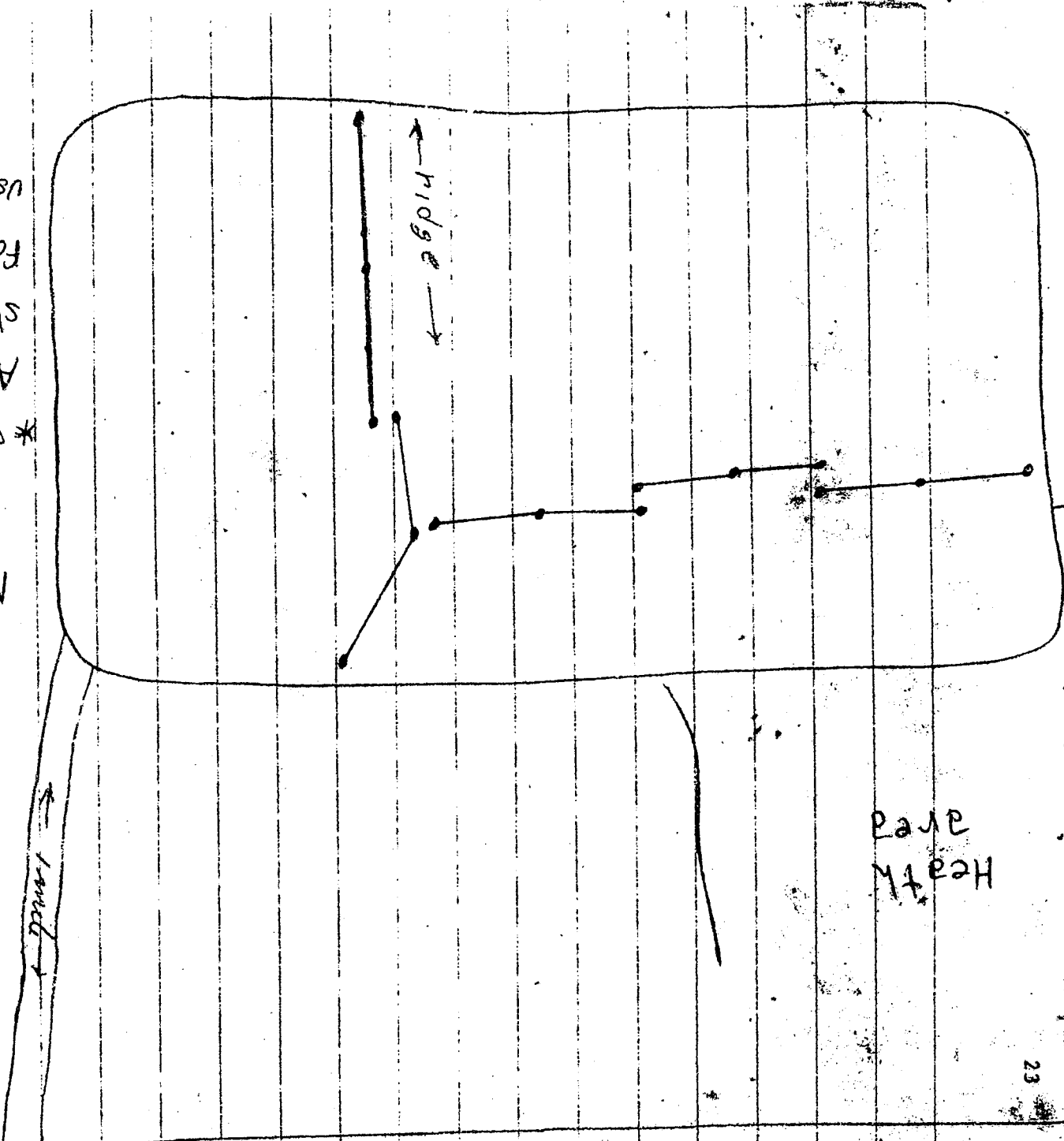


FIGURE 1  
AREA 200  
MIST NET PLACEMENT

\* This field belongs to  
Alton Sawyer - He  
should be consulted  
for permission to  
use it.