

Long Term Monitoring of the Coral Reef Organisms of Biscayne National Park

Annual Report 1989-1990 Field Seasons

Amendment no. 1
Subagreement no. 25
Cooperative Agreement No. CA-5000-4-3005

NOAA/PMNH/ATPS & UCA Research Foundation Inc.

Volume 3 of 8

Photomicrographs of *S. longirostris* and *S. longirostris* larvae and identification from the *S. longirostris* photographs

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DUPLICATE:
Original in
Museum Archives
BISC-118

Long Term Monitoring of the Coral Reef Organisms of Biscayne National Park

Final Report: 1989-1990 Field Seasons

Amendment no. 1,
Subagreement no. 25,
Cooperative Agreement No. CA-5000-4-8005

Between USDI, NPS, & UGA Research Foundation Inc.

Volume 3 (of 8)

Deliverable: First and Second Year Tracing and Identification from the Quadrat

Photographs

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11 141 611

Mann 1

Agga
13

made 68

SEP 90 1001 1001 1001

II BNP 36

12 MAY 90

1. Add: Mar 68, RE
2. Agga 12 and Page 16, HIA

Long Term Monitoring of the Coral Reef Organisms of Biscayne National Park

Final Report: 1989-1990 Field Seasons

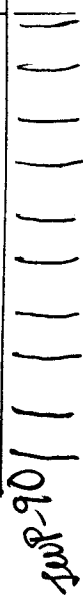
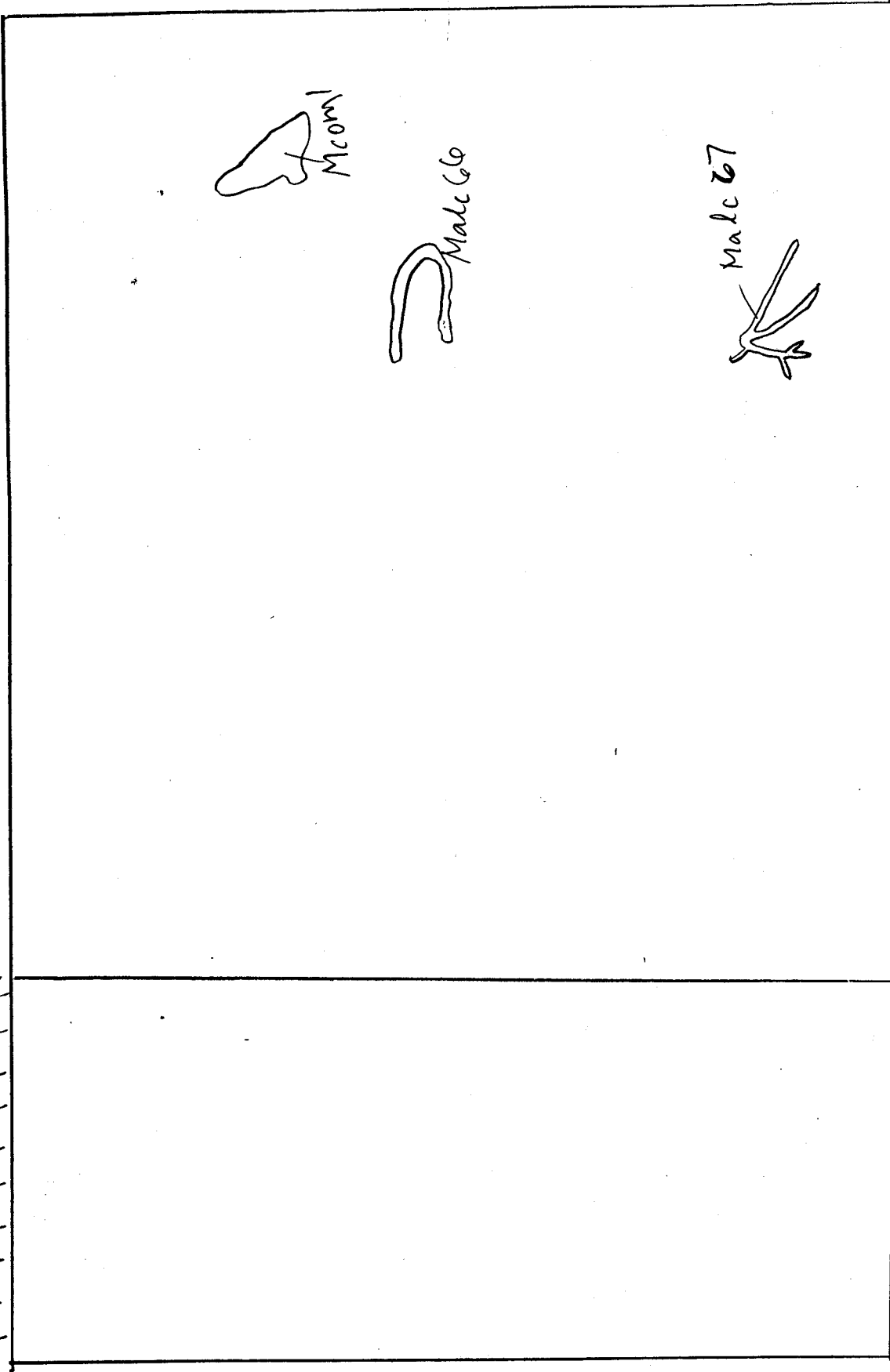
Volume 3 (of 8)

Deliverable: First and Second Year Tracing and Identification from the Quadrat Photographs

In 1989 a coral reef monitoring project was established in Biscayne National Park in order to measure changes in coral reef community structure over time and to provide information about the natural resource to park management. Two reef sites in Biscayne National Park were chosen for intensive, ongoing study: Ball Buoy Reef, at the southern end of the Park, and Triumph Reef, towards the northern end. Methods employed at each site were: (1) a 1000 m² visual swim survey to assess species richness and the species present in the area; (2) three permanent line transects, 25 m long each, (3) a permanent 13.5 m² photostation, and (4) a 100 m² haphazard photographic survey to test the representativeness of the 13.5 m² photostation. In 1990, we added to each station: (1) two additional permanent 25 m long line transects; and (2) three permanent video transects, utilizing three of the five existing line transects.

This volume of information contains reproductions of the mylar tracings resulting from each photostation during the 1989 and 1990 field seasons. The photostations sampled by this method were permanently fixed by stainless steel stakes that were cemented into holes drilled into solid dead substrate at the perimeter of each photostation. We expect that the sites can be reliably relocated for some years into the future.

At each site a 2.00 m x 2.25 m PVC grid (area 4.5 m²) was fixed at marks filed into the steel stakes. Over this grid a small camera framer, measuring 50 cm x 75 cm (area 0.375 m²), was placed in order to photograph each area of the photostation at fairly close range. A Nikonos V



BNP 35 12 MAY 90

1. Ppor 1 not seen, dead
2. Sad: Male 66 and Male 67, both TR

camera loaded with Kodak Tri-X Pan film, ASA 400, was mounted on the small camera framer at a distance of 1.0 m away from the plane of the small framer to photograph each area. Each time the grid was laid down, 12 photographs were required to cover the 4.5 m² area of the grid. At each of these photostations, the grid was laid down and fixed in place three times for a total area of 13.5 m², requiring 36 photographs for total coverage.

The black and white photos were printed on polycontrast paper at a size of 8" x 10", and outlines of each coral colony in each photograph were traced onto mylar sheets with the help of a light table. Each scleractinian and hydrozoan coral colony was identified to species, assigned a unique colony number, and followed through time. The tracings were digitized to obtain projected surface areas of each coral colony. The data resulting from this effort were analyzed for percent cover of living coral, relative abundance of coral species, species richness, and species diversity using a software program developed in our lab for this purpose. A presentation of results and summary statistics is available in Volume 1 of this Report. A detailed description of the method and its analysis is presented in Volume 8 of this Report.

This volume of information contains reproductions of the mylar tracings resulting from each photostation during the 1989 and 1990 field seasons. Each tracing includes the outline of the camera frame, identifying information on the specific reef site (BNP I, Ball Buoy Reef; and BNP II, Triumph Reef), frame number (1-36), and date of the photograph (date-month-year). The outlines of each individual colony, its species abbreviation (first letter of the genus name followed by the first three letters of the species name), and its unique colony number are indicated in the tracings. Cut lines, used to eliminate parallax and colony duplication, are also evident in the tracings; for more information about this procedure please refer to the software manual in Volume 8 of this Report.

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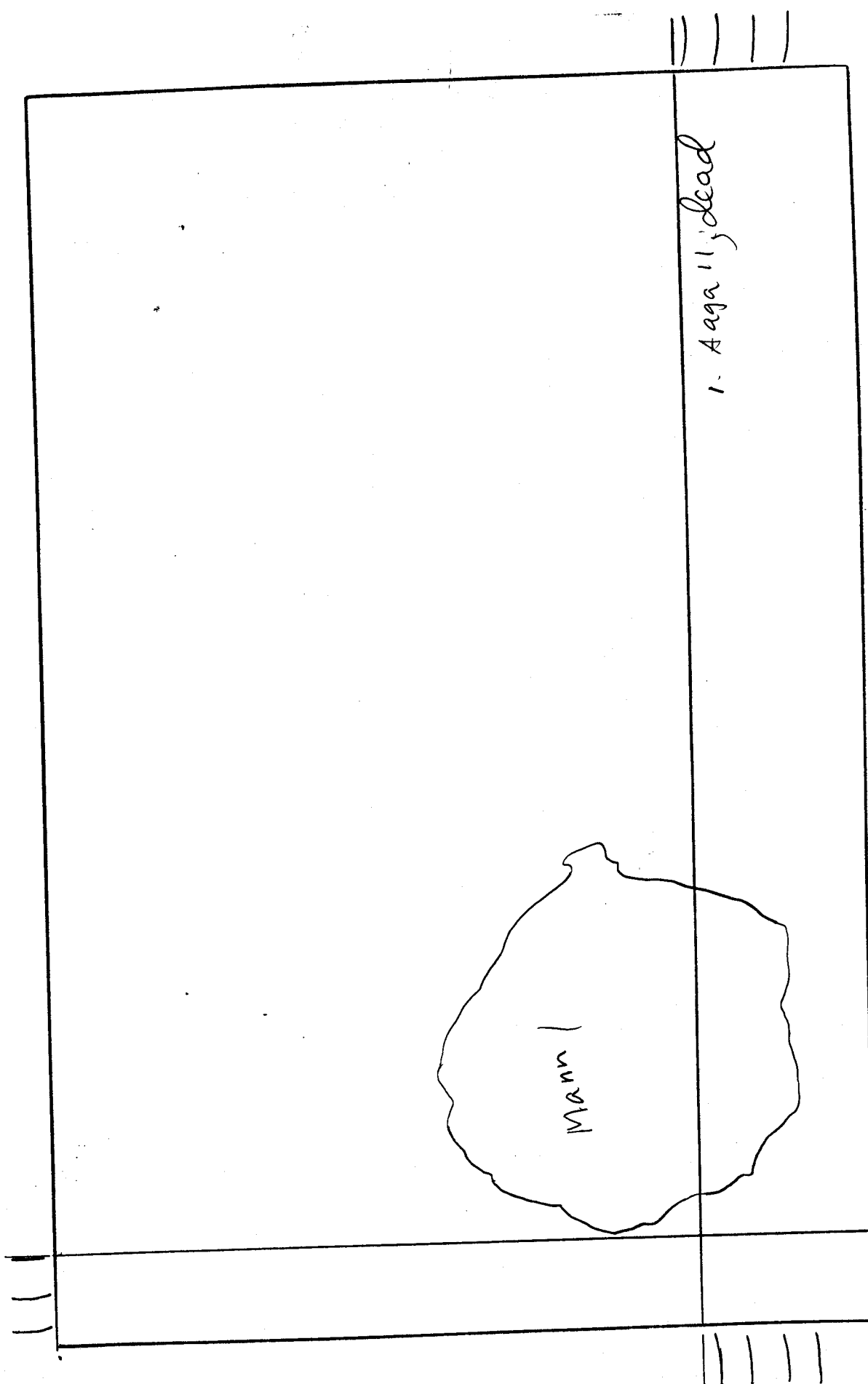
File 65-5

06-90
|||||

II BUP 34 12 MAY 90

The tracings presented in this volume follow the order:

1. BP01, or BNP I, Ball Buoy Reef, 1989, frames 1-36
2. BP01, or BNP I, Ball Buoy Reef, 1990, frames 1-36
3. BP02, or BNP II, Triumph Reef, 1989, frames 1-36
4. BP02, or BNP II, Triumph Reef, 1990, frames 1-36.



Supd II BNP 33 12 MAY 90

|||||

Mean 7

Mean 34

Agd 17

1. Add: Agd 17 if not seen

in 89 RE

2. Agd 10 and Past 15 not
seen - both MIA

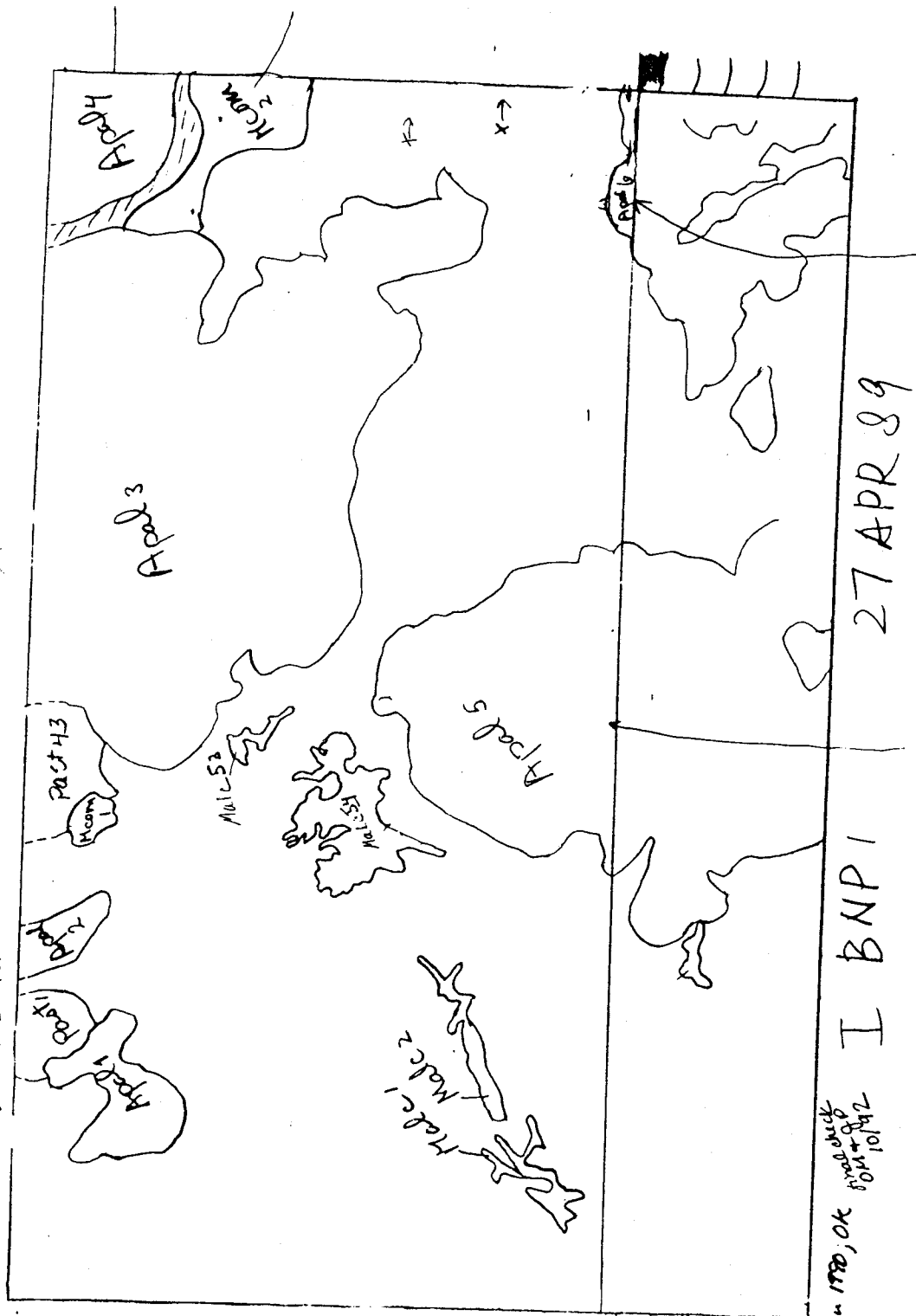
3. Mean 7 UA

swp 90 |||||

IL BNP 32

12 MAY 90

changes, CA 1/12: frame out line.

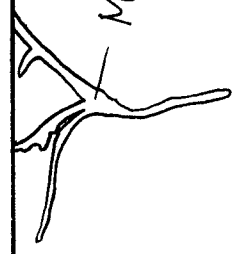


in 1980, OK
find out
10/10/82

I BNP 1

27 APR 89

Tif - ✓
Report -



Male 36

Male 64

Side CS

- (1. Male 36, 37 are actually the same colony.
- 2. Add: Male 64, new SR

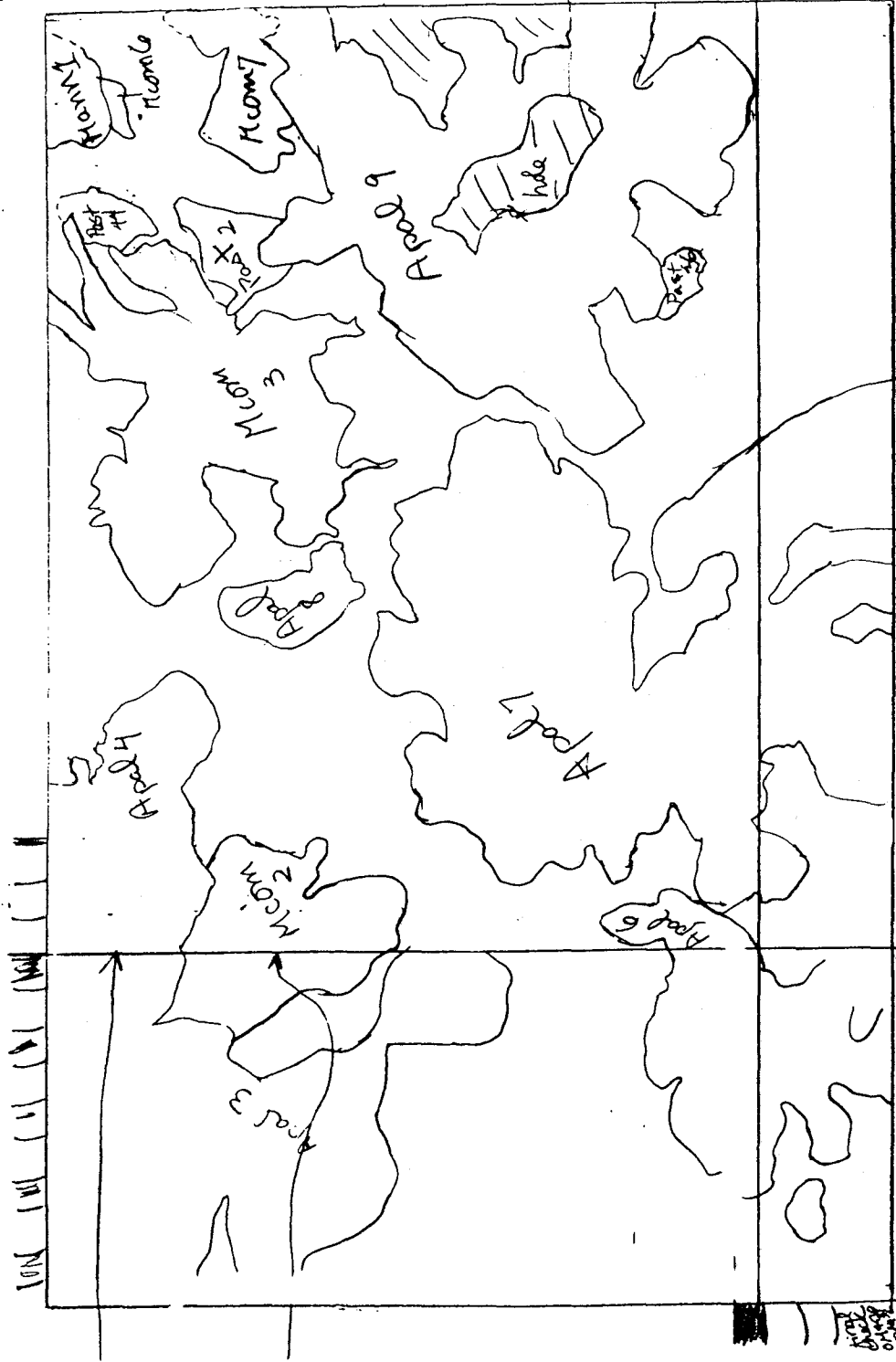
12 MAY 90

II BNP 21

02-AMP

1990 Annotations: Add 1 colony of Past

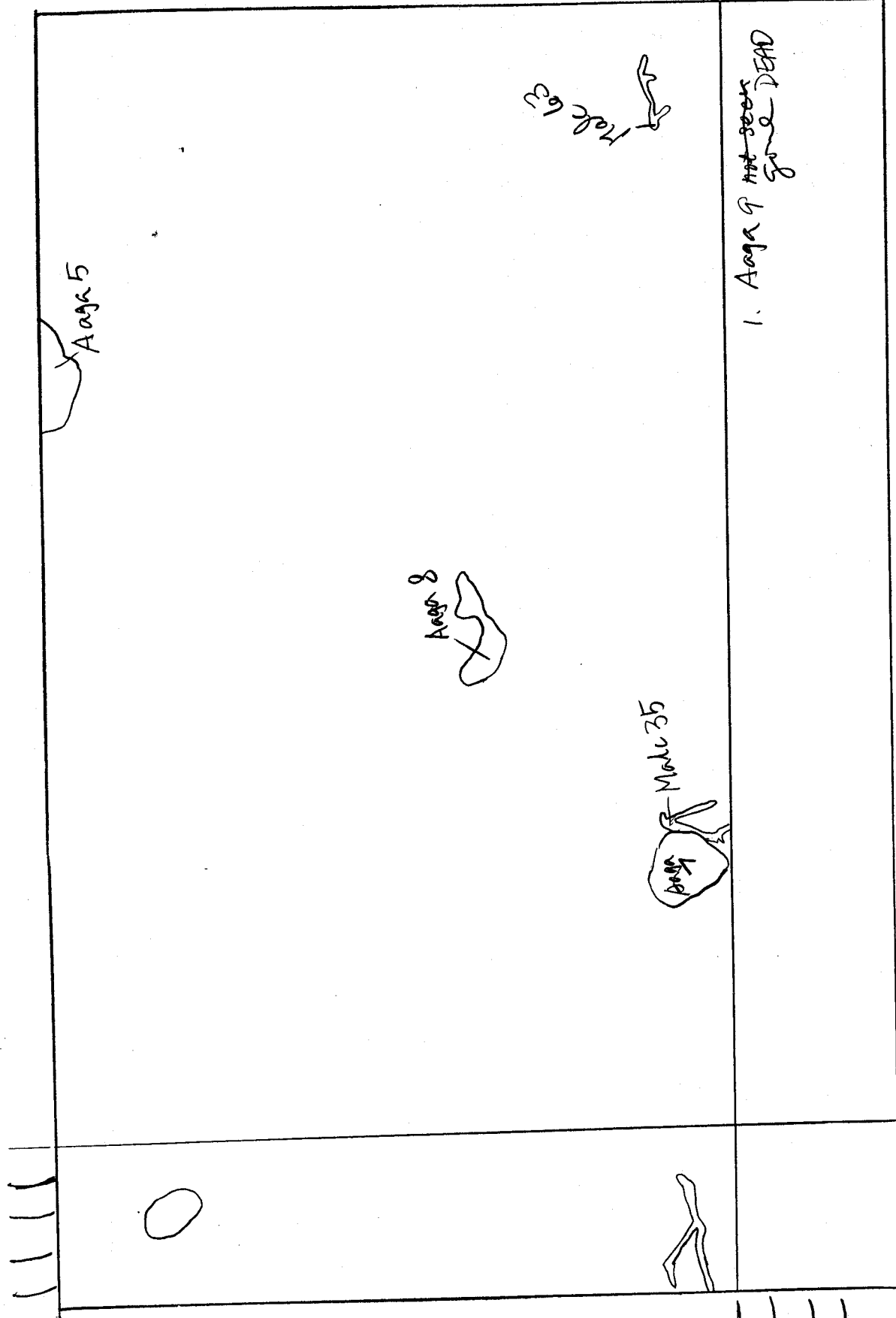
change DM 1/12 Mean 3, 4, 5 → 3 (no change), add Past 4; changed shape Mon 7; frame outline.



Add: Past 36

I BNP 2 27 APR 89

1990-90



JWP-90 ||||| II BNP 30 12 MAY 90

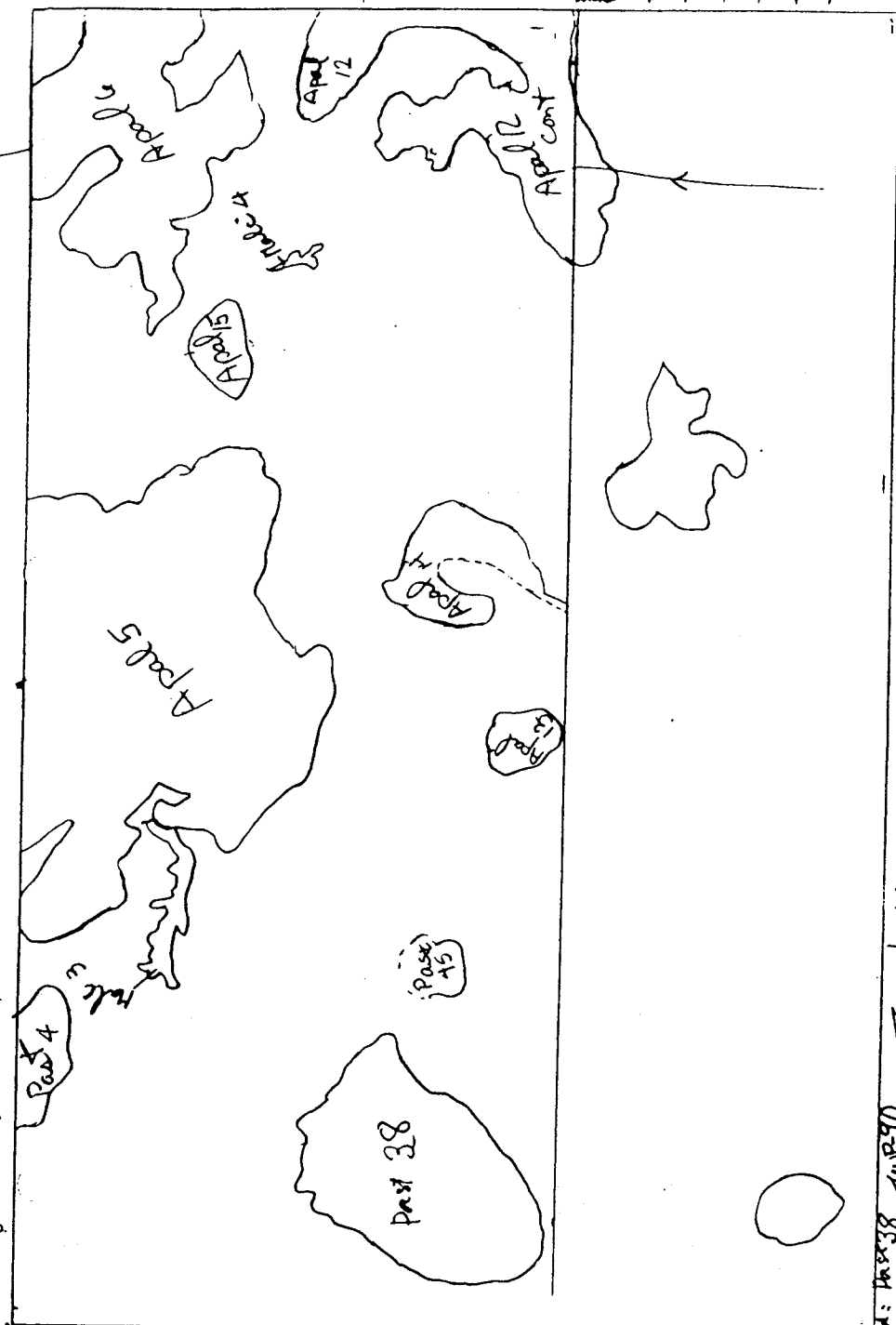
APR 89

Add: April 89
Expand 12 com 8

I BNP 3 27 APR 89

1700

changes on MC: D shape April 14; frame outline.



add: Part 38 SWP 90
Part 5 → April 12
I BNP 4 27 APR 89

all
with
+ 90
10/12

|||||

|||||

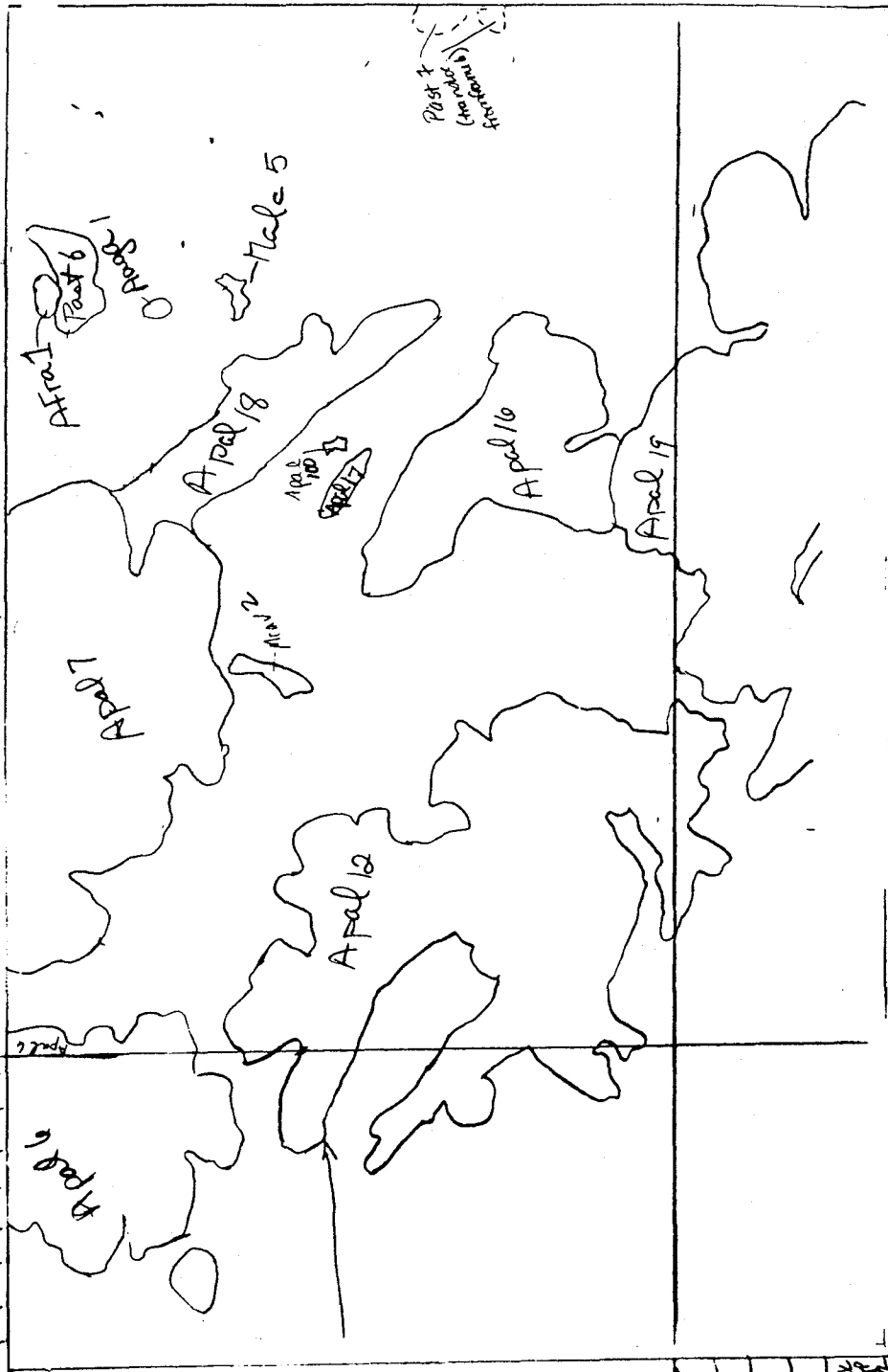
Male 32

1573

1

10P-90 ||||| II BNP 28 12 MAY 90

Charter 18011/12-000 Hla 2, Nos 100, Post 7; France outline.



I BNP 5 27 APR 89

12 MAY 90

Page 5

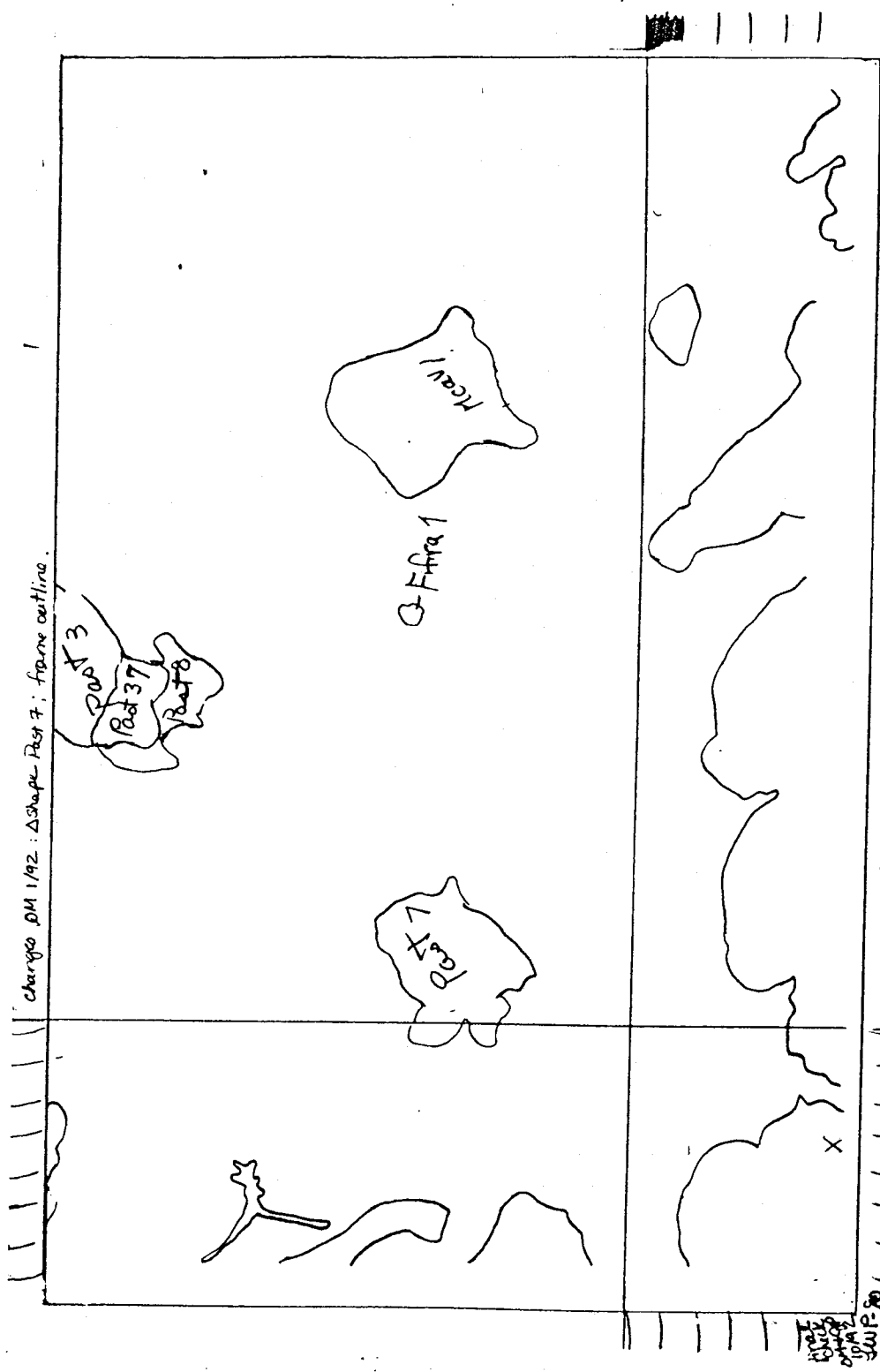
Walc
31

Chad 7/19

bc11

II BNP 27

12 MAY 90



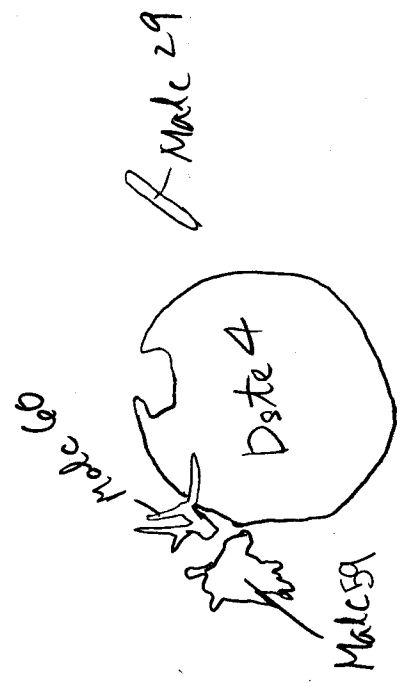
changes DM 1/92: shape Post 7; frame outline.

Removed Post 7
Renamed Post 37

I BNP 6 27 APR 89

||||

♂ Malc 61
♂ Malc 62



♂ Malc 29



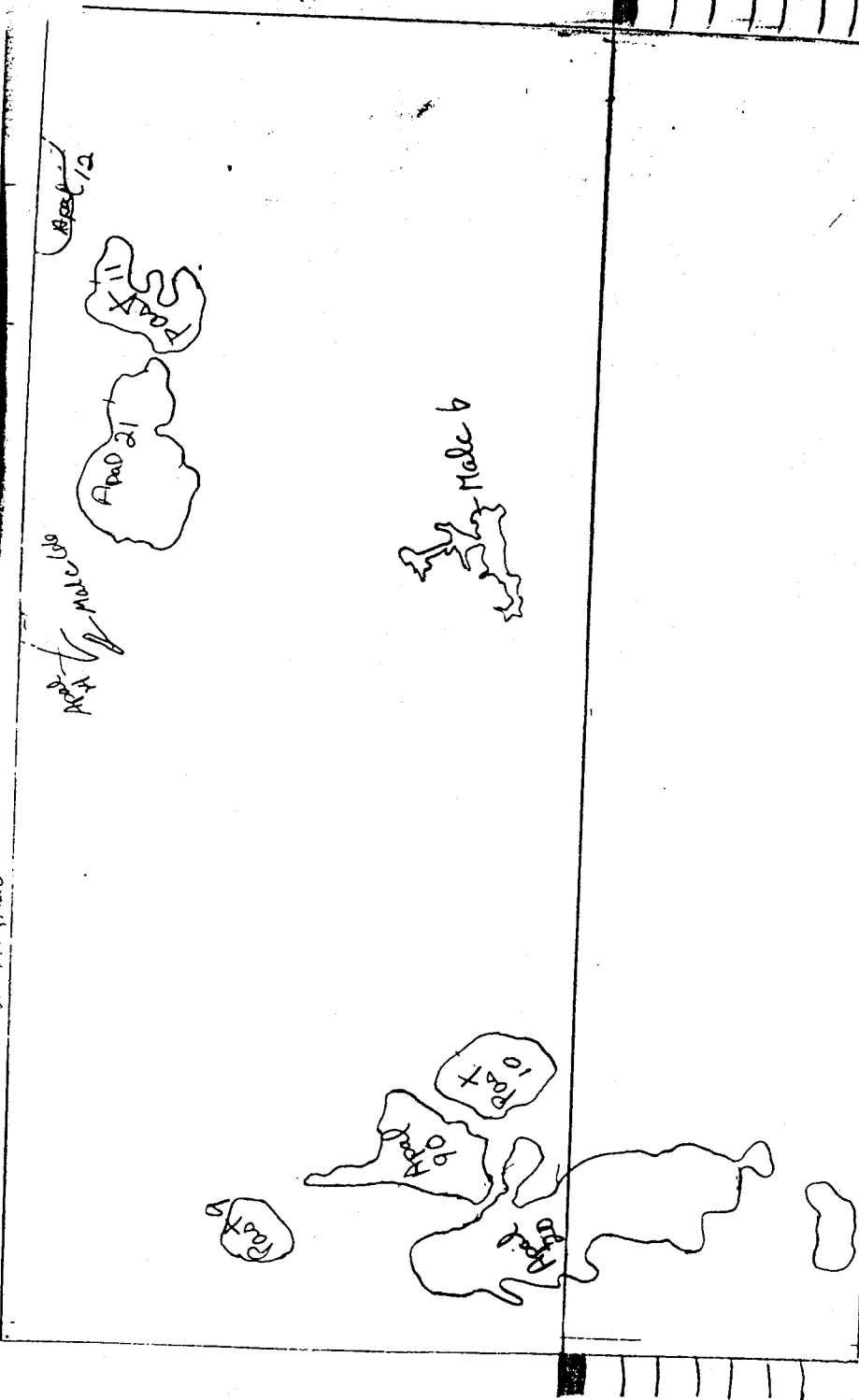
1. Add: Malc 59, new TR
2. Malc 61 SR
3. Malc 62 SR

SWP 90 (| | | |)

II BNP 26

12 MAY 90

things on 1/92: from outlin. on April, Male



JWP-70 8/23/92

I BNP 7

27 APR 89

Redrawn April 21
Add April 90



12 MAY 90

II BNP 25

8629-90

Hand-drawn map of a river system, likely the Colorado River, showing various islands and confluences. The map is oriented with the river flowing from left to right. Key features include:

- Top Left:** A small island labeled "April 12".
- Top Center:** A large island labeled "April 12" with a cross symbol.
- Top Right:** A small island labeled "April 13".
- Center:** A large, irregularly shaped island labeled "April 12".
- Bottom Left:** A small island labeled "April 12".
- Bottom Center:** A large, irregularly shaped island labeled "April 12".
- Bottom Right:** A small island labeled "April 12".
- Far Right:** A small island labeled "April 12".
- Far Left:** A small island labeled "April 12".
- Far Bottom Left:** A small island labeled "April 12".
- Far Bottom Center:** A small island labeled "April 12".
- Far Bottom Right:** A small island labeled "April 12".

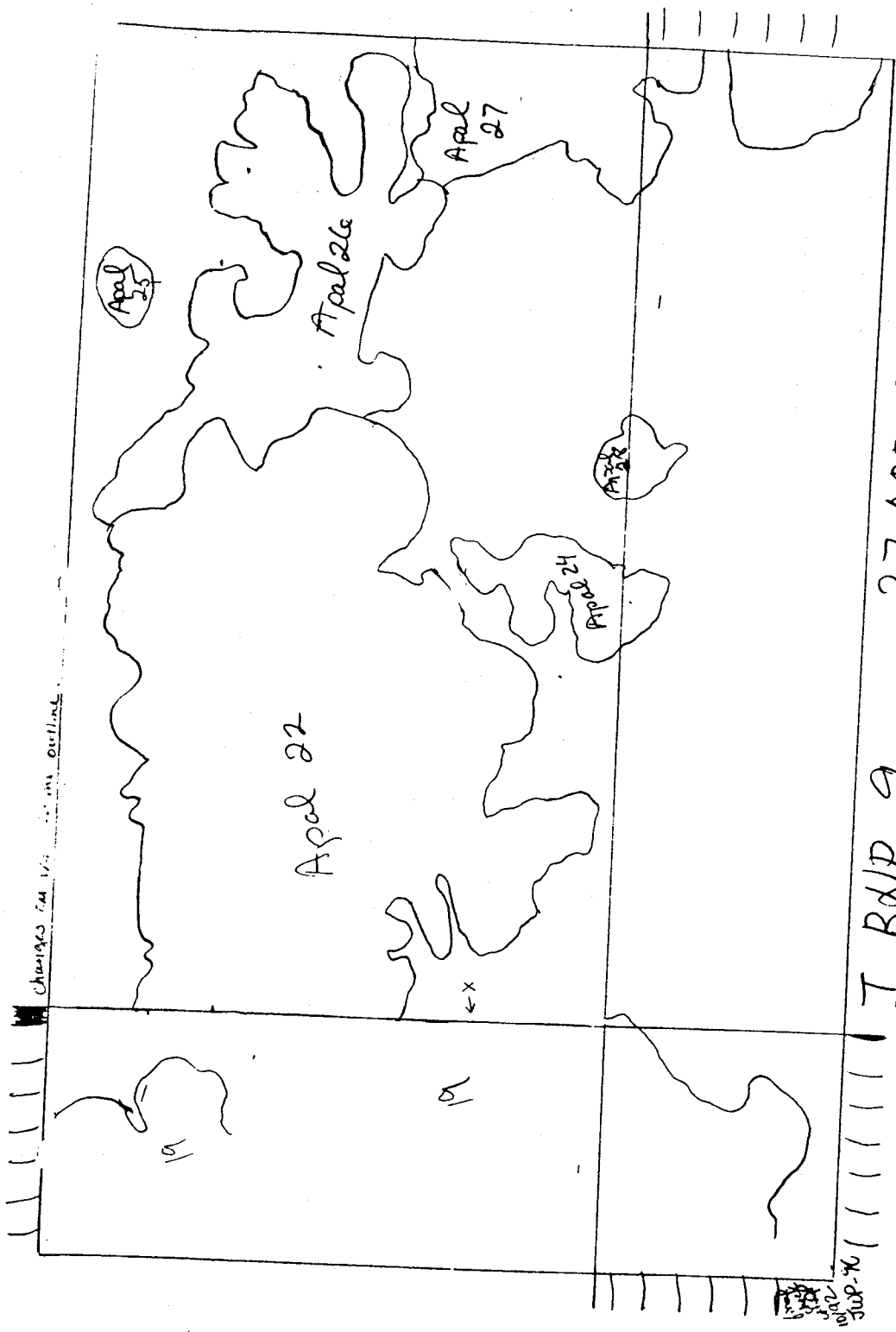
The map is drawn on a grid of horizontal and vertical lines. The river is represented by a series of connected, irregular shapes. The islands are labeled with dates, indicating a sequence of observations or events along the river.

27 APR 89

~~Y-23~~ Male 28

II BND 24 12 MAY 90

ZWP 90



changes in the outline

I BND 9 27 APR 89

1. April 29 disappeared in 90

[Handwritten signature]

1. April 29 disappeared in 90

2. April 1992 appeared in 90

Handwritten: 55 BNB 10

27 bbl of

4. Add = DCLC5 = 9



Aaga 4

Malc 27



II BNP 22

12 MAY 90

JWP-90

Part 28

of fact

Handwritten: *Handwritten*

72c

Deli

1000

Q
Pas 50

2

JWP-90

IBND 11

27 APR 89

Add Male 34
Redman Male 7

APD. 10-16-91Z

|||||



Male 59



Male 58

2-Male 60



Male 26

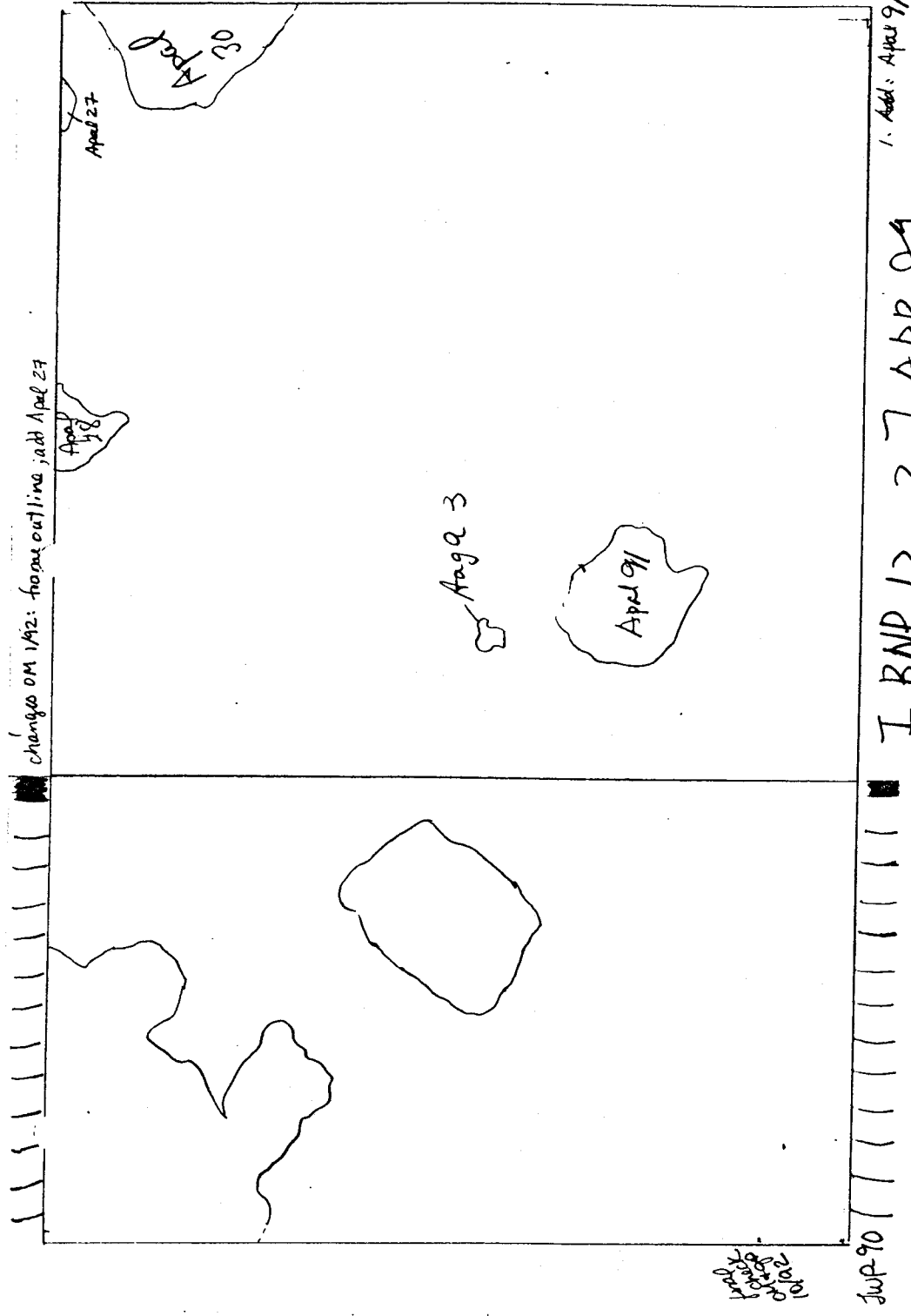
|||||

JWP-90

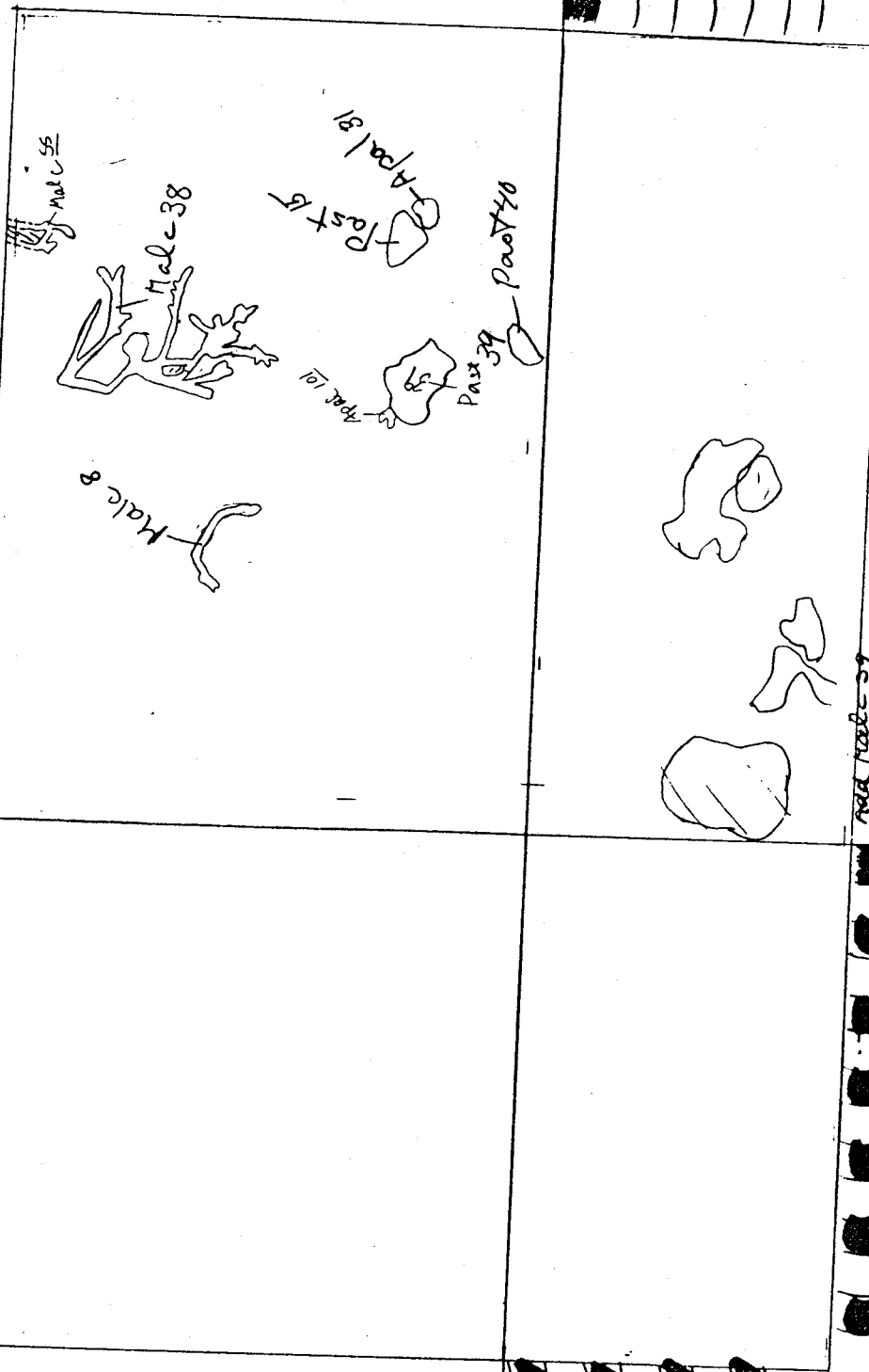
II BNP 21

12 MAY 90

1. Add: Male 59, New TR
60, New SR



changes on 1/92: add Male 55, April 101; frame outline; shape Male 8, Male 38.



add Male 55
swP-90 I BNP 13 27 APR 89
1. spot not disappeared in 90
2. Add: Past 39, 40

MP-6-76-92
no 2-1-93 (red)

|||||

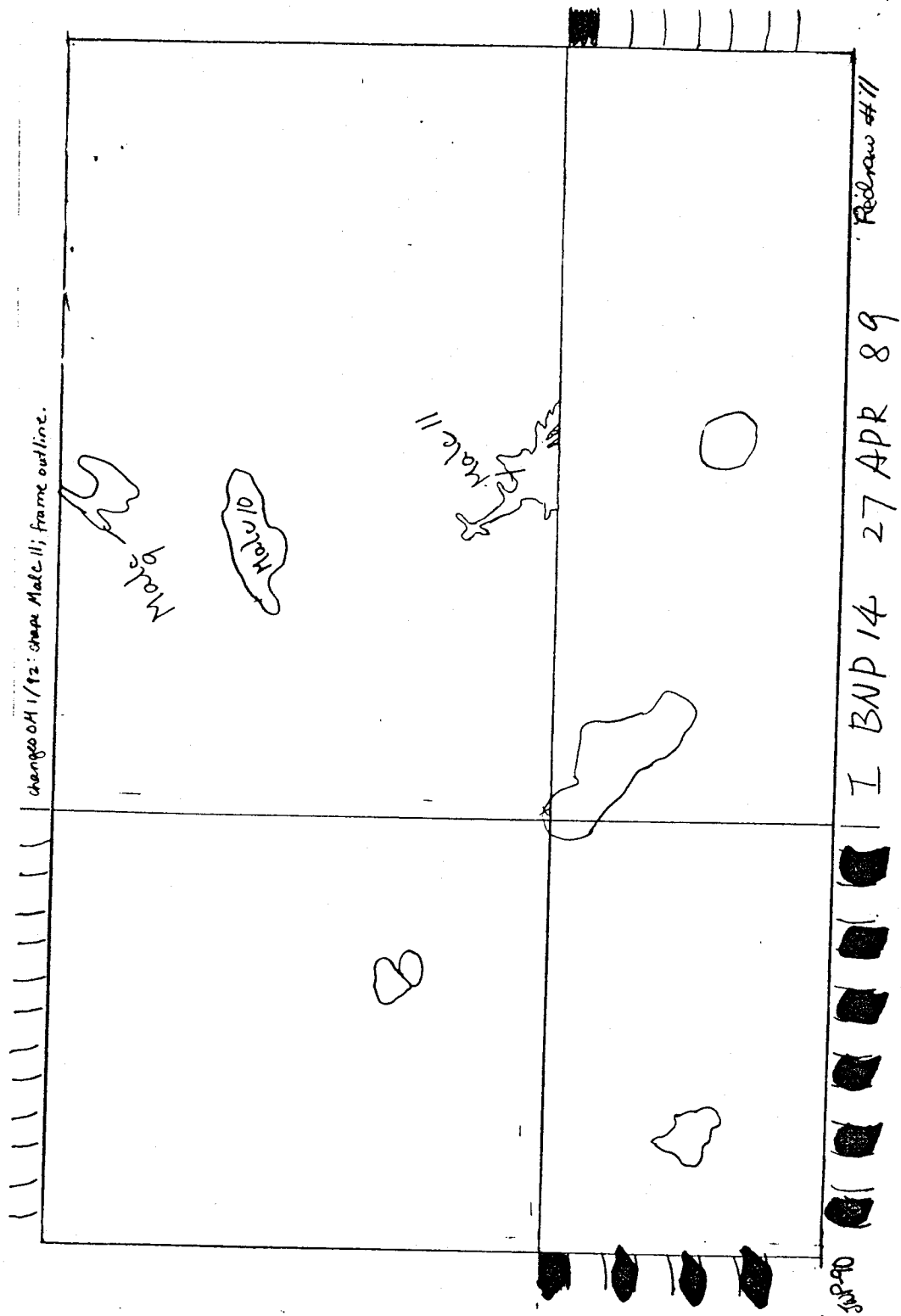
Q-Fra 1

Q-Sia 2

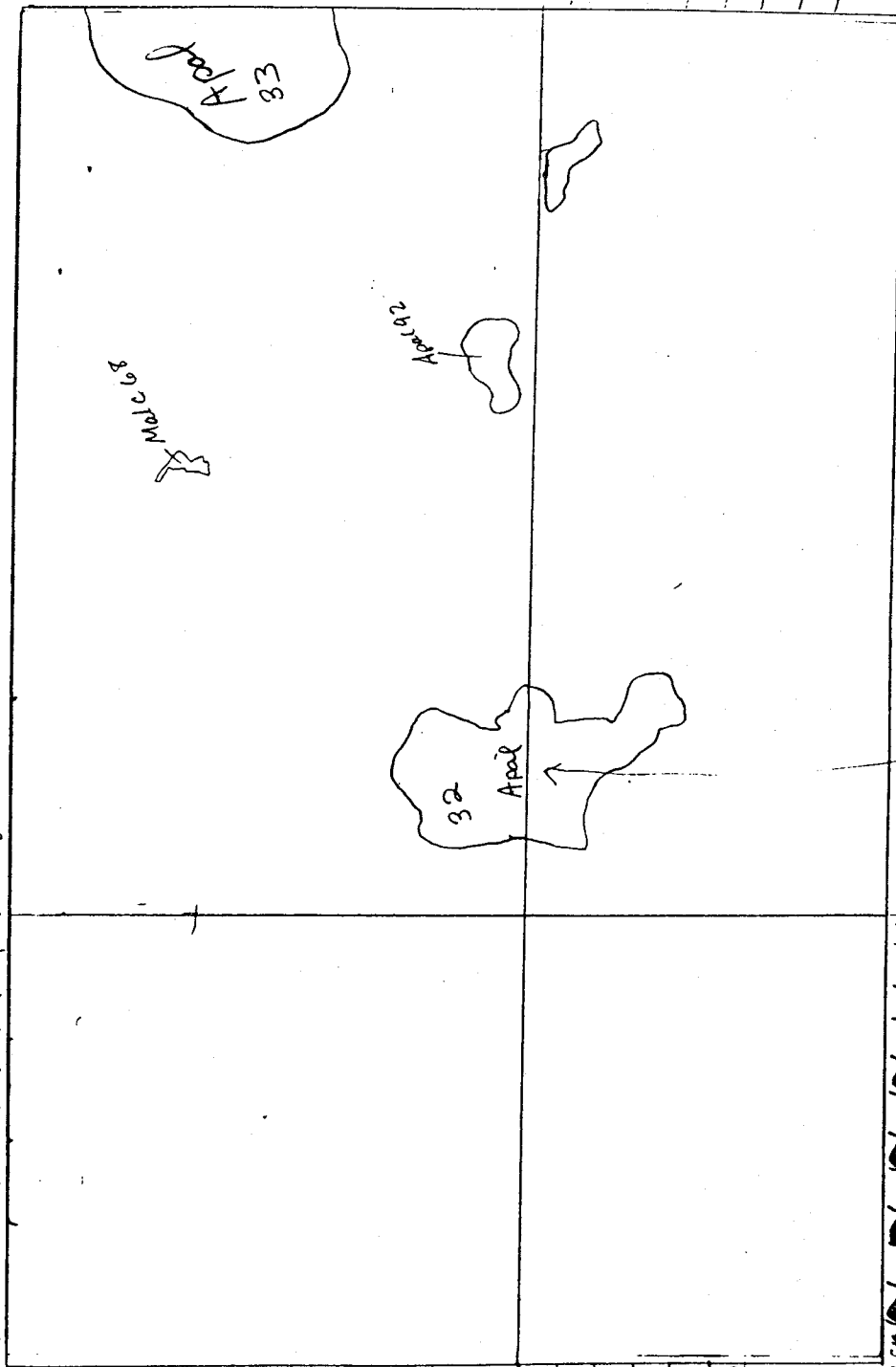
JUN 90 |||||

II BNP 20

12 MAY 90

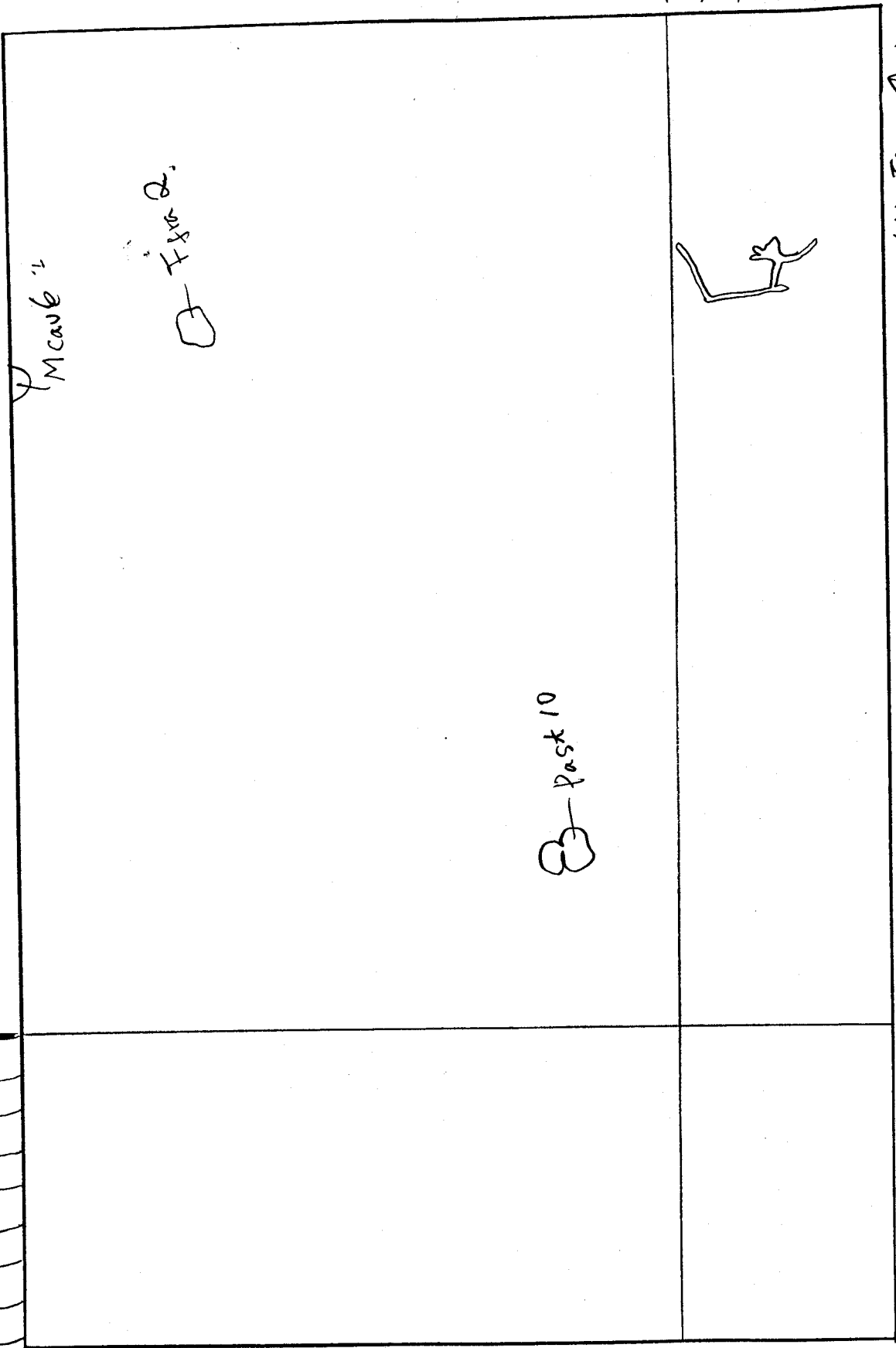


change CM 1192: add April 92; frame outline, add March 88



1. April 92 not seen
2. May 88 " "
I BNP 15 27 APR 89

MAP - 10-16-92



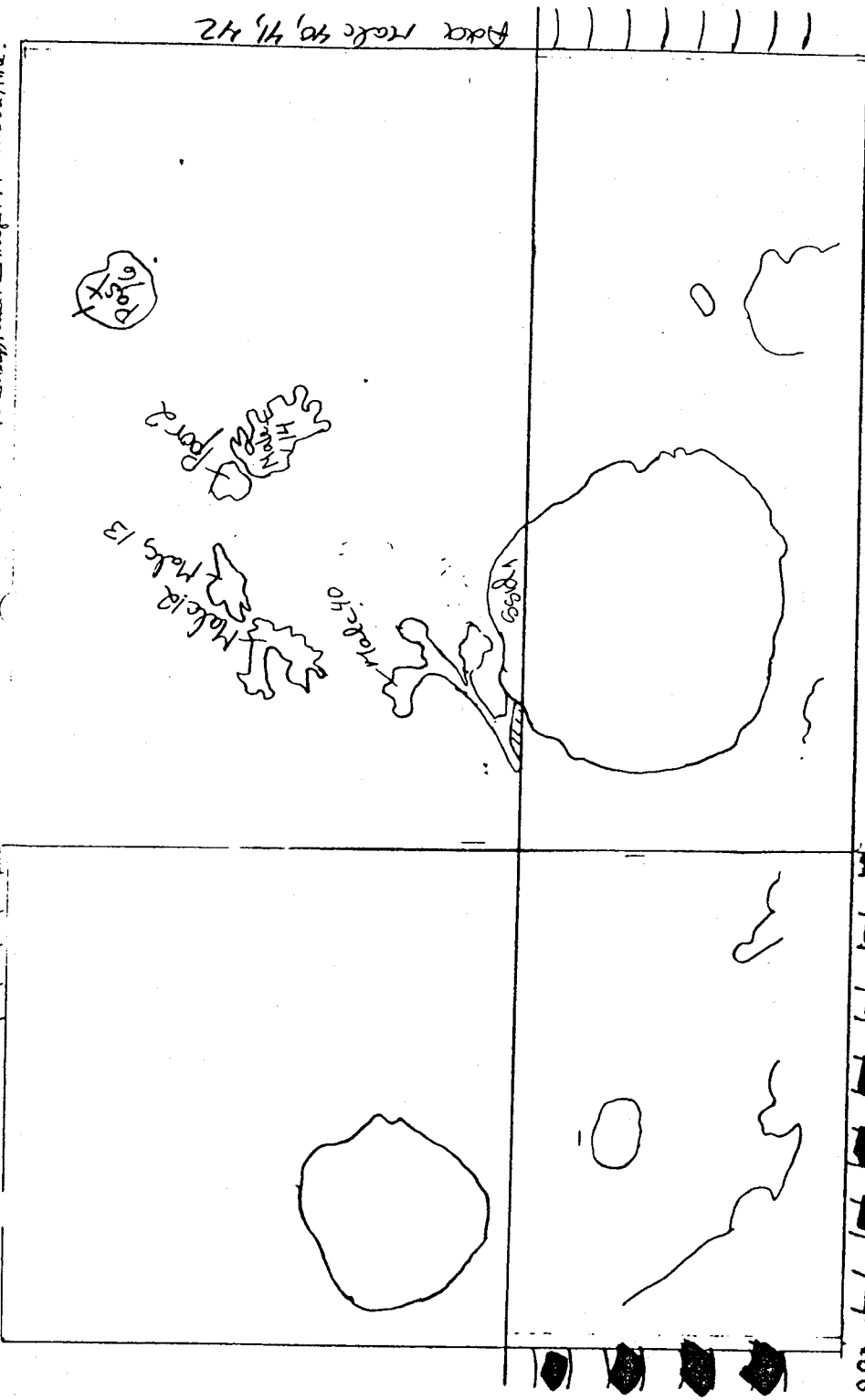
1. Add. Ffra 2, new SR

12 MAY 90

II BNP 18

Jurg 90

change NM 142: Number Male 40, 41, 42 → 40 (one group); delete target; frame outline.

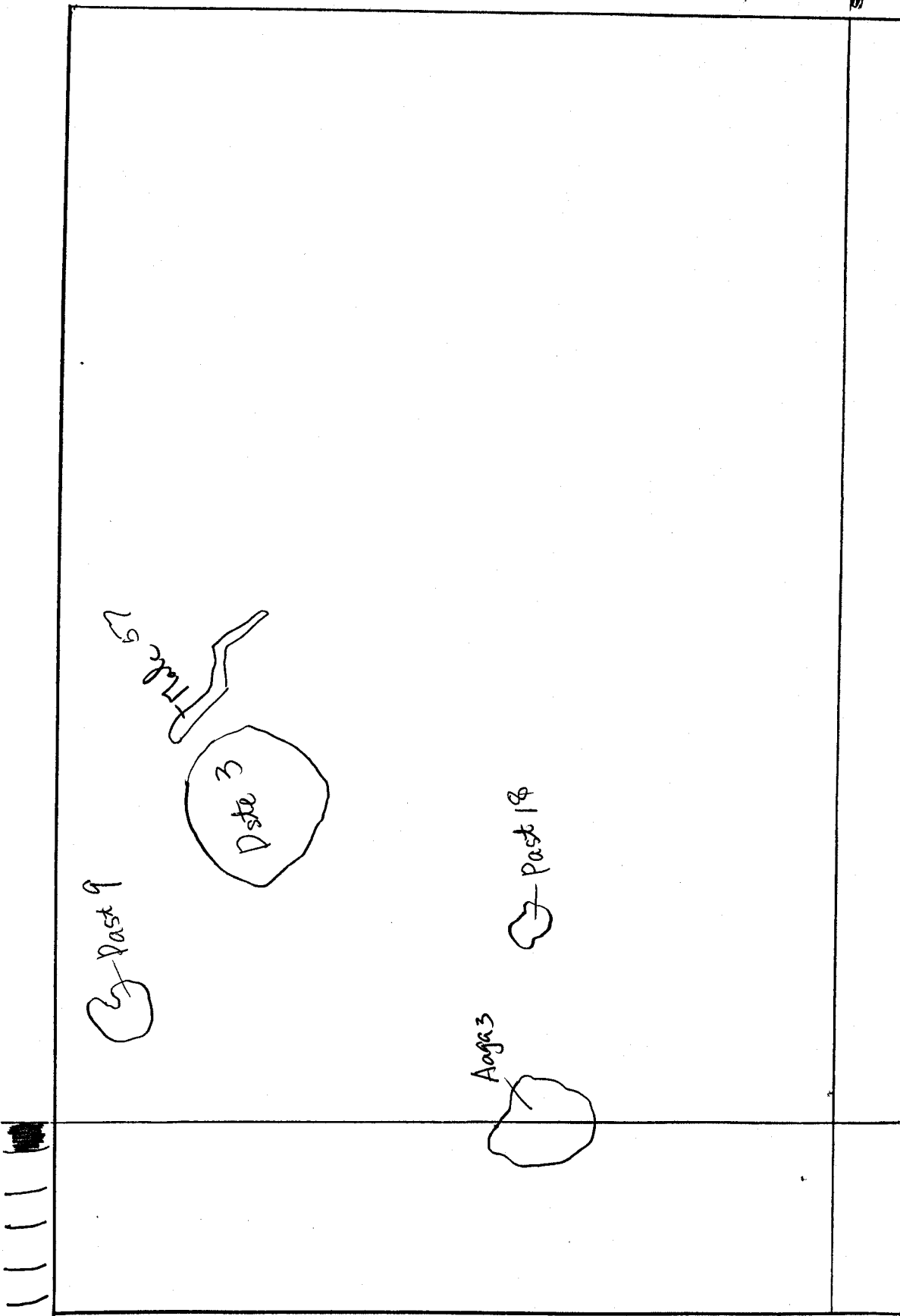


* Add accept Ssid 1 Jone in 90/Remove Meav2

I BNP 16 27 APR 89

40-90

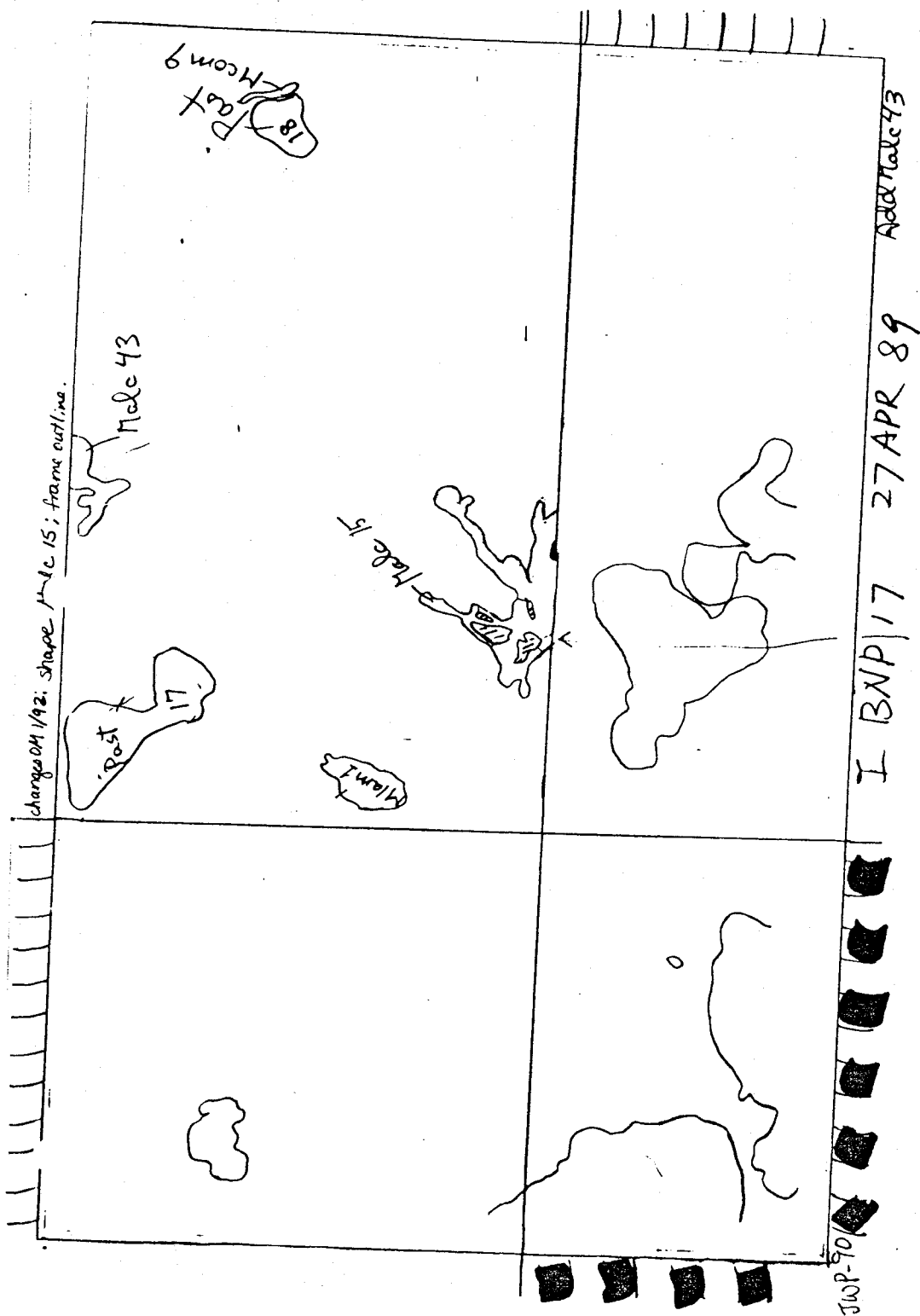
MP 10-15-92



12 MAY 90

II BNP 17

1. Add: Past 18, new RE
2. Male 25, dead
3. Male 57, new SR



Aga₃

JWR-90 (/ / / / /) II BNP 16 12 MAY 90 1. Malc 24 dead.
(2. Aaga 3 redrawn in 89)

12 MAY 90

II BNP 16

A hand-drawn map of a field, oriented vertically. The map is divided into four quadrants by a horizontal line and a vertical line. In the top-left quadrant, there is a small, irregularly shaped area labeled "13" and "Poor". In the top-right quadrant, there is a small, irregularly shaped area labeled "19" and "Wet". In the bottom-left quadrant, there is a small, irregularly shaped area labeled "April 30" and "Poor". In the bottom-right quadrant, there is a small, irregularly shaped area labeled "April 30" and "Poor". In the center of the map, there is a large, irregularly shaped area labeled "April 30" and "Poor". There is also a small, irregularly shaped area in the bottom-left quadrant, labeled "April 30" and "Poor". A small circle is drawn in the top-right quadrant. The map is drawn on a grid of lines. The text "April 30" and "Poor" is written in a cursive, handwritten style. The numbers "13", "19", and "30" are also written in a cursive, handwritten style. The map is drawn on a piece of paper with a grid of lines. The text "April 30" and "Poor" is written in a cursive, handwritten style. The numbers "13", "19", and "30" are also written in a cursive, handwritten style. The map is drawn on a piece of paper with a grid of lines. The text "April 30" and "Poor" is written in a cursive, handwritten style. The numbers "13", "19", and "30" are also written in a cursive, handwritten style.

April 34 gone in 40
30

27 APR 89

I BVP 18

06-DMF

(1. Add: Mca correction)
Halc 22 dead

12 MAY 90

II BNP 15

SWP 90

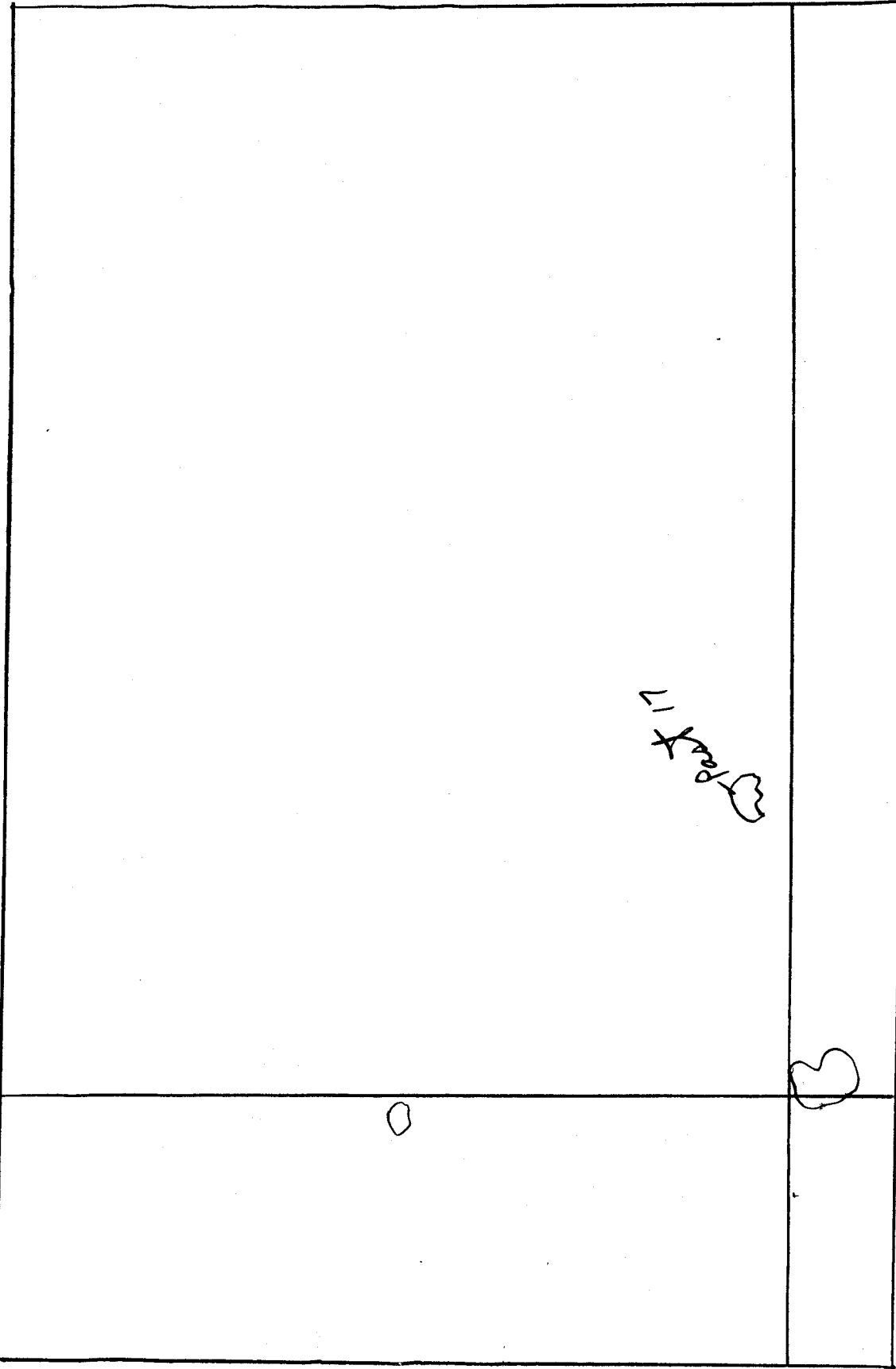
Hcau 6

[illegible]

I BNP 19 27 APR 89

1. April 36 gone in 90

|||||



17
X
Cloud

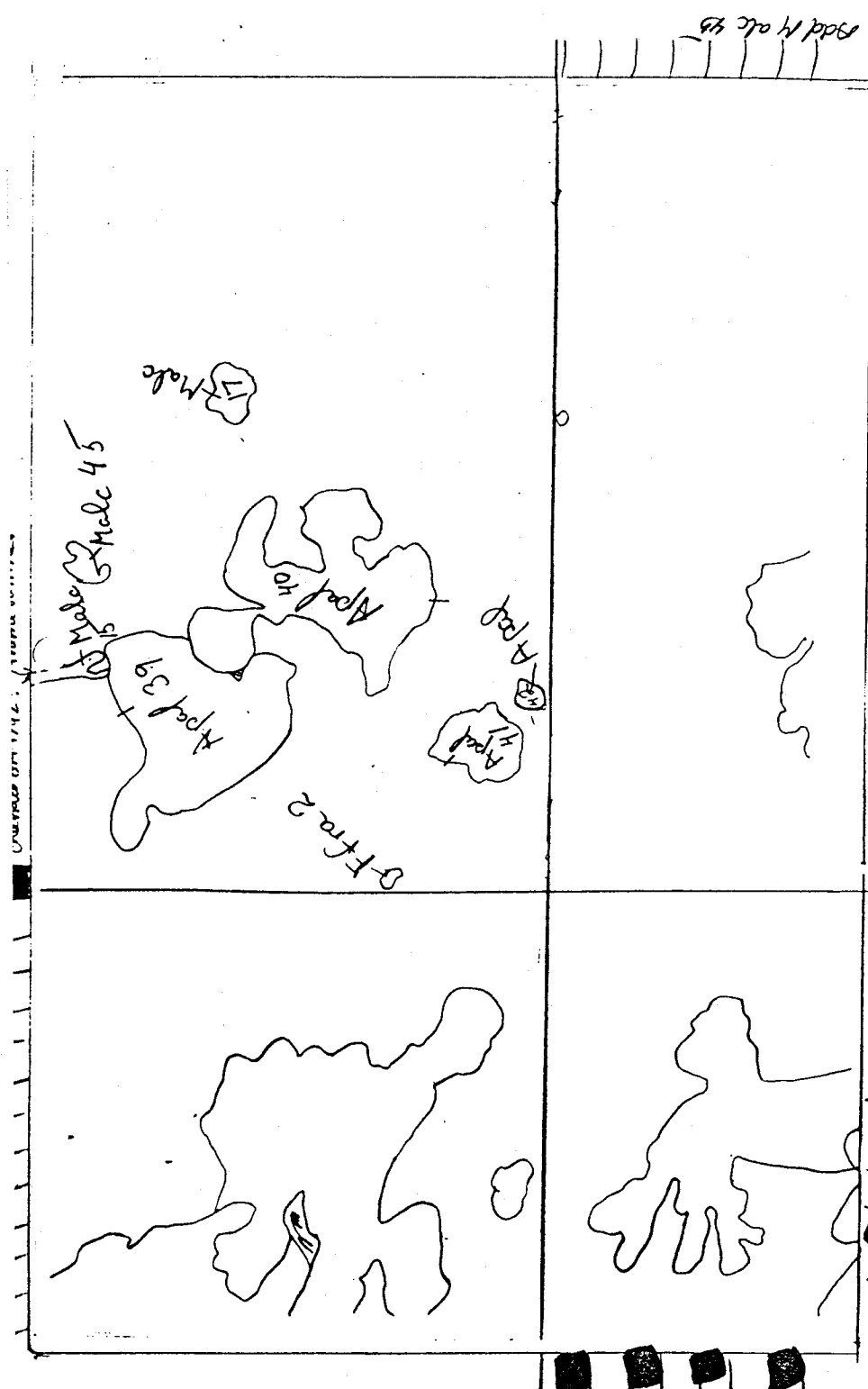
|||||

1. Male 21 gone here. AWOL
2. Past 17 RE

12 MAY 90

II BNP 14

B



Ffra 2, Apol 41
and Apol 42 90x
1-90

I BNP 20 27 APR 89

40840

Q 2008/19 Mac	

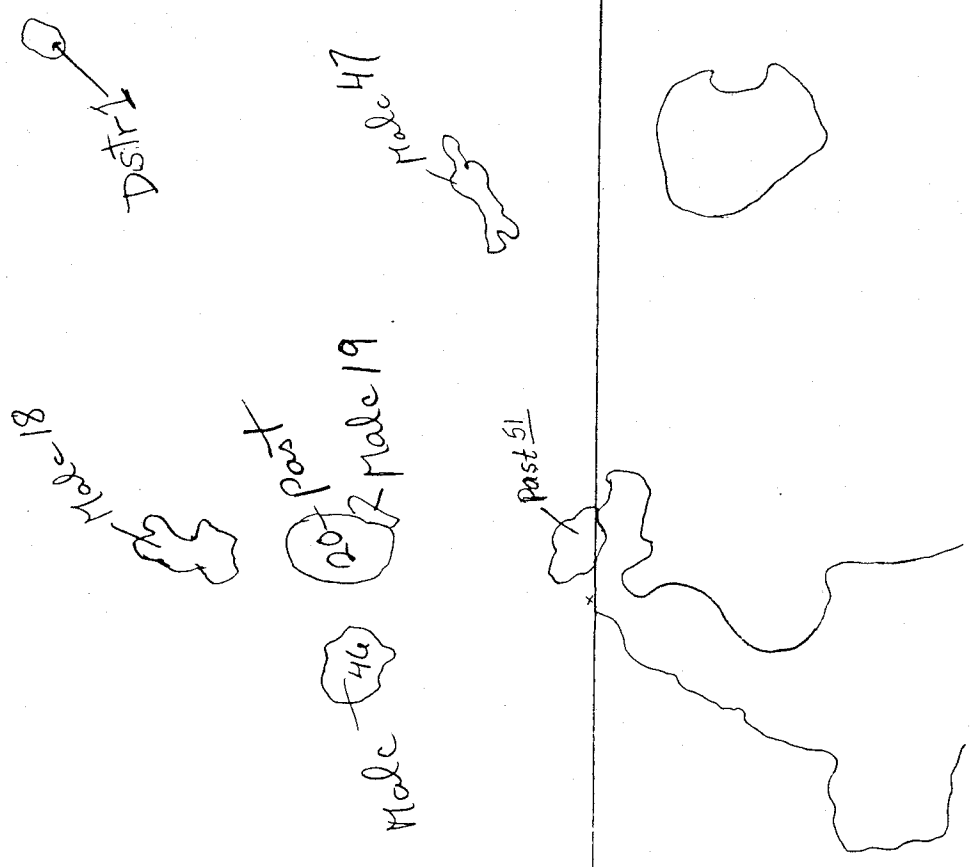


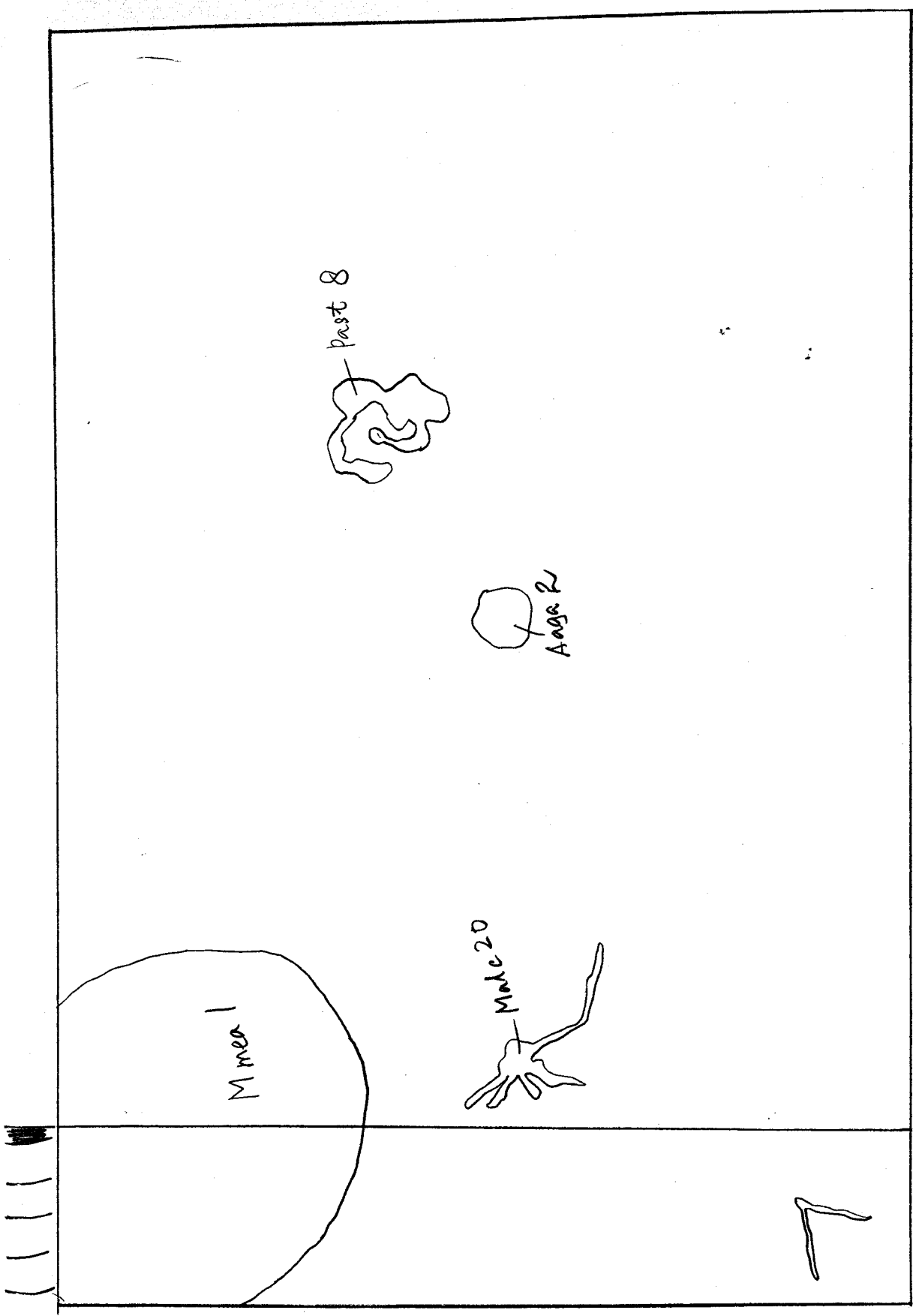
12 MAY 90

II BNP 13

changes in 1/92: inner horizontal line; add post 51 frame outline.

sup 90 I BNP 21 27 APR 89 (Add. ~~Post 46~~ Mole 46 47)





JWP-97 (|||||) IF BNP 12 12 MAY 90

changes 04/1/92: frame outlines.

Map of the Hawaiian Islands with handwritten labels:

- Top left: "12/14" (likely Pearl and Hermes)
- Top right: "12/14" (likely Pearl and Hermes)
- Below top right: "part 50" and "same day"
- Center: "part 50" and "part 50"
- Bottom left: "part 50"
- Bottom center: "part 50"
- Bottom right: "part 50"

INP-90

charges OM 1/42: from outline.

ofrac

Apal 44

Mal 28

ofrac

1. 1/42: 2 v 1014: 14/10

I BND 23 27 APR 89

20P-90

Male 17

Male 47

Male 14
Male 8
Male 3
Male 9

Male 15
Male 16

SWP-90 II BNP 10 12 MAY 90

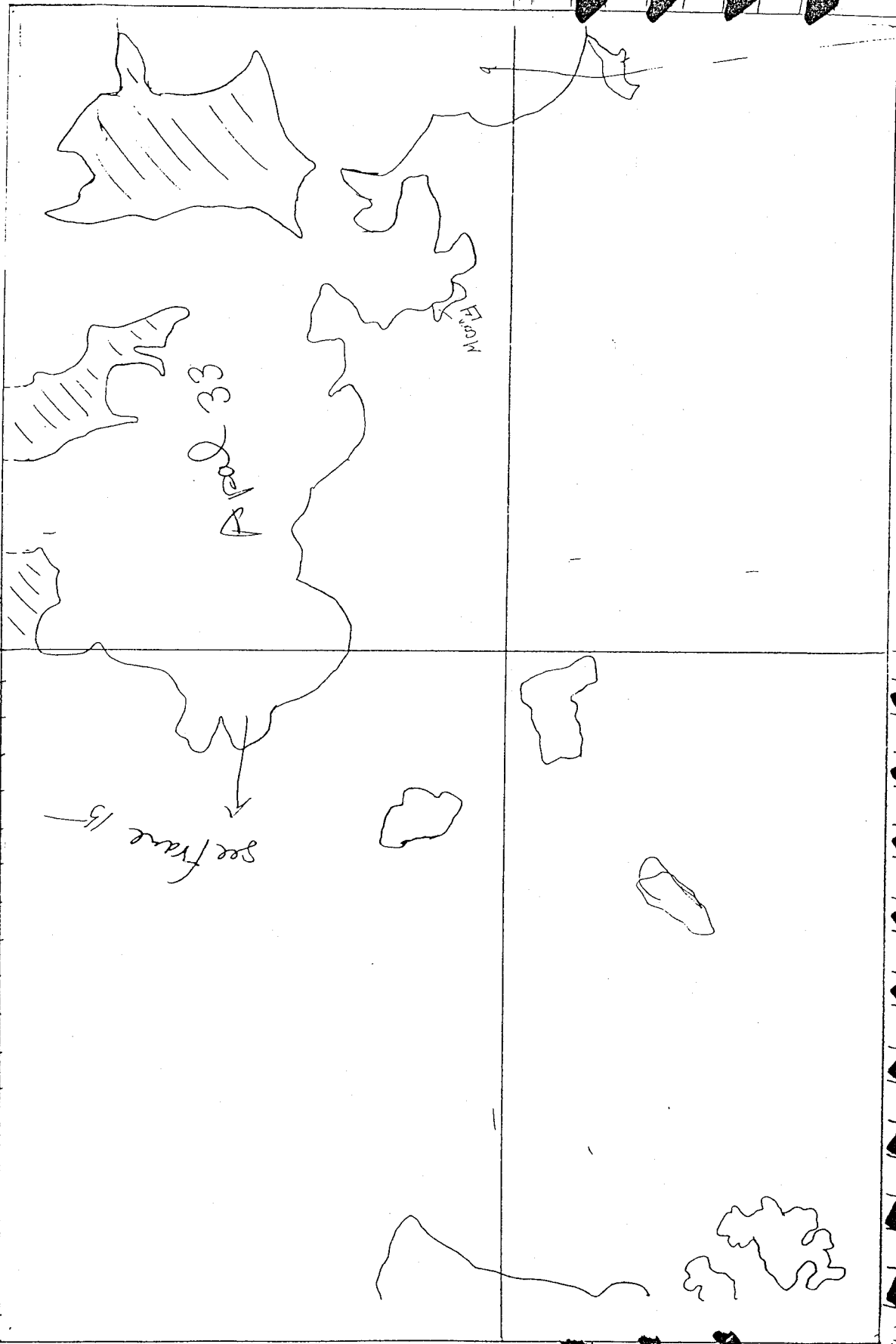
- 1. Add: Male 47, new TP 49 new SR
- (2 Add Male 48 to '89 survey)

The image shows a hand-drawn map of the United Kingdom, oriented vertically. The map is divided into two sections by a vertical line. The left section contains a large landmass labeled 'Mcom 10'. To its right, there are two smaller landmasses labeled 'Deli 3' and 'Deli 1'. The right section contains a large landmass labeled 'Deli 3'. The map is drawn with simple black outlines on a white background.

I BNP 24 27 APR 89

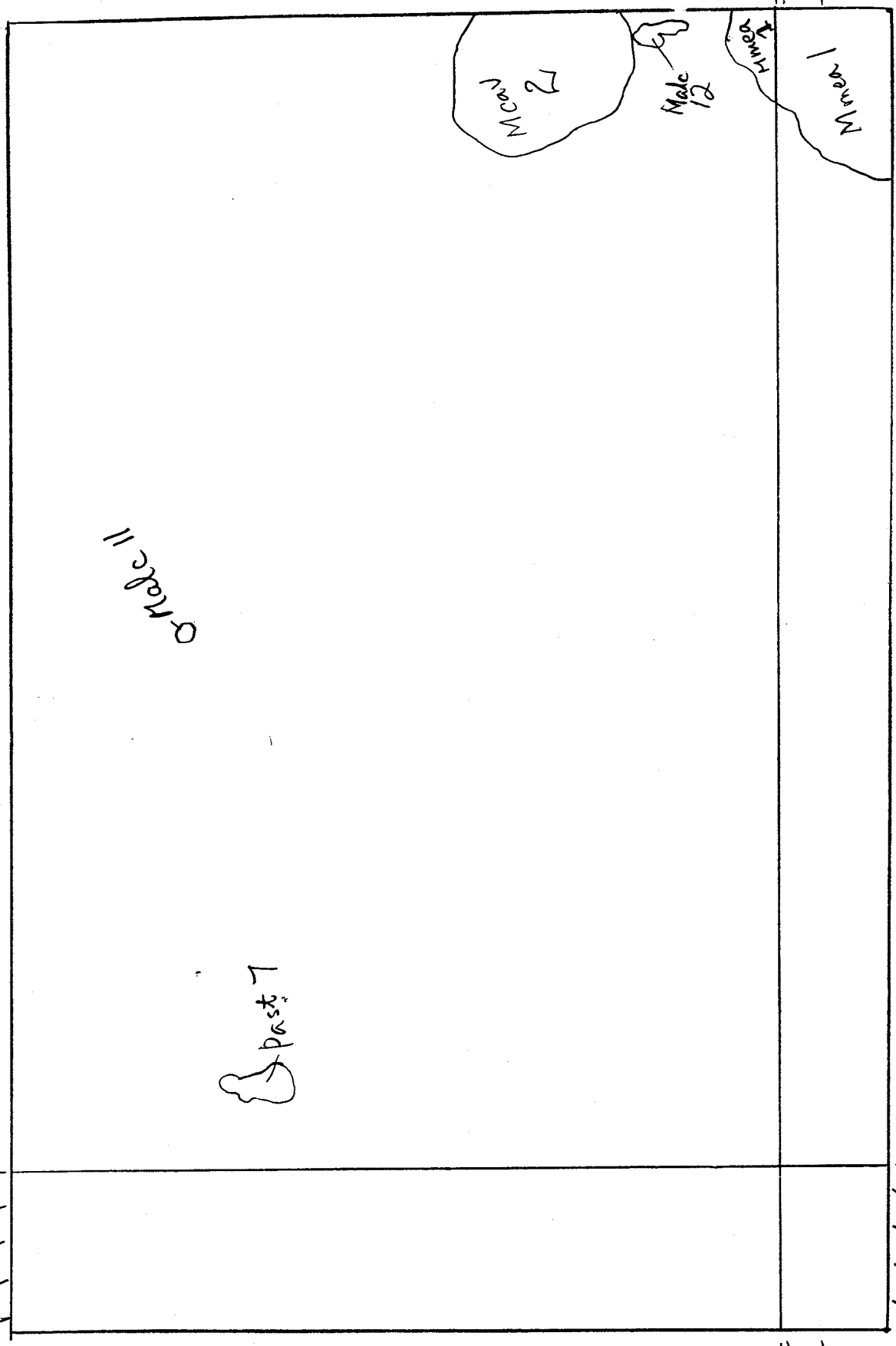
2. Add: Apal

changes on 1/92 of 11 min 14; frame outline.



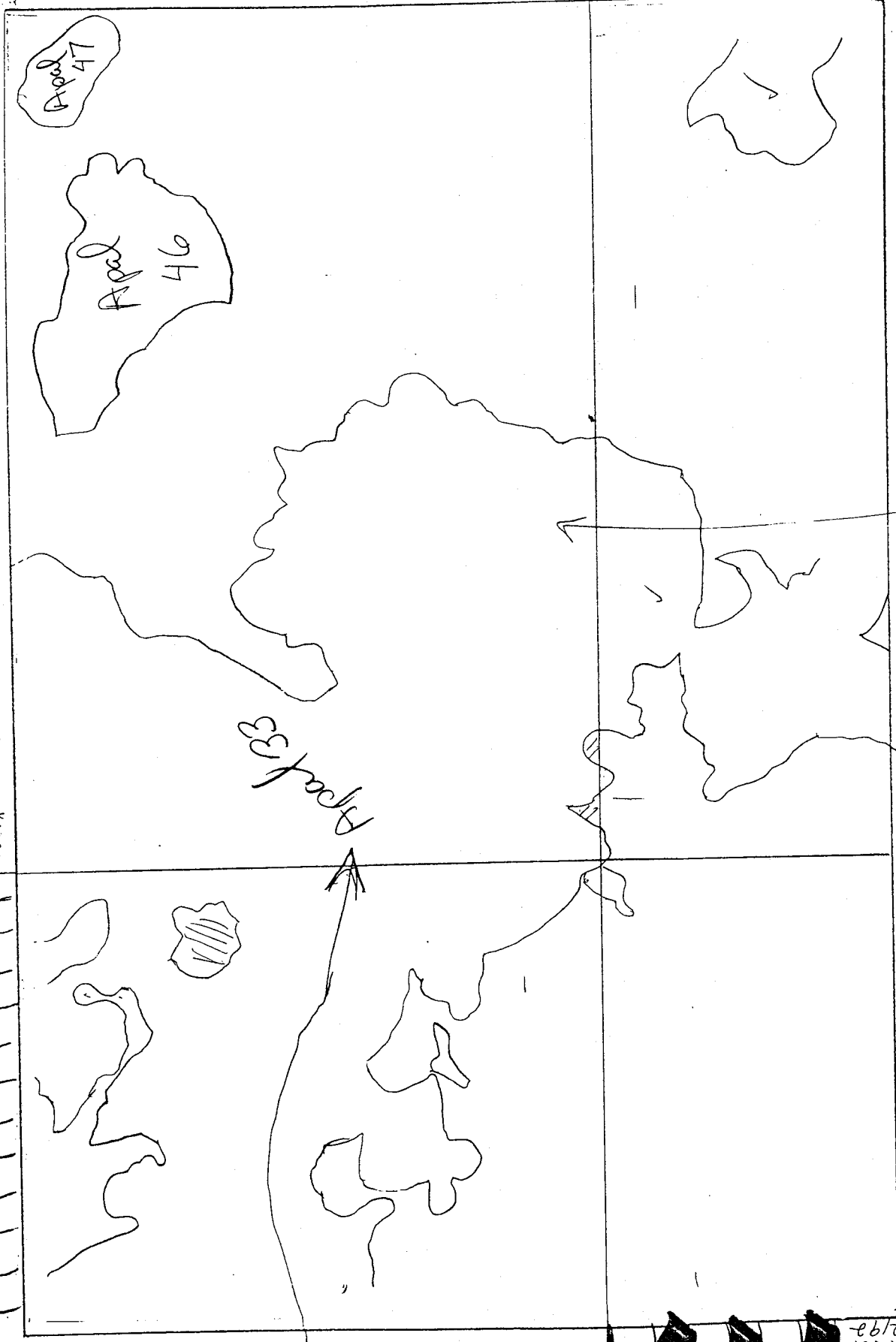
I BNP 25 27 APR 89

JP-90
84404
12/92
frame check



II BUP 8 12 MAY 90

changes OM 1/92: from outline.



I BNP 26 27 APR 89

Final check
OK + JEP
12/192
JEP-90

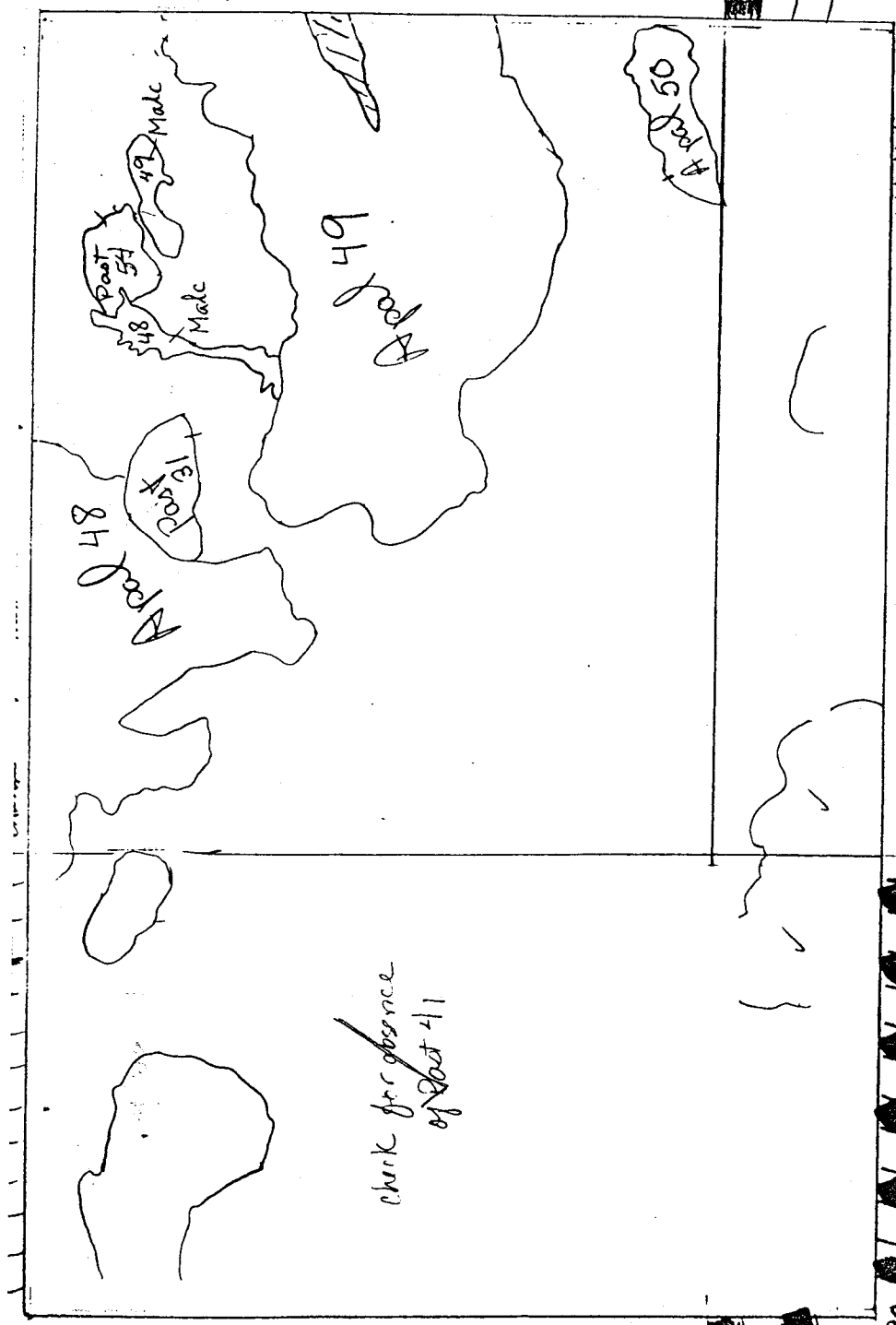
Q-10246

1. Aaga / gene Anol

100-90 II BNP 7

12 MAY 90

Malc 46, new TR



JWP-90 I BNP 27 27 APR 89 1. Add: Male 38+49 2. Add: Post 50

Male 9

Male 44

Male 45

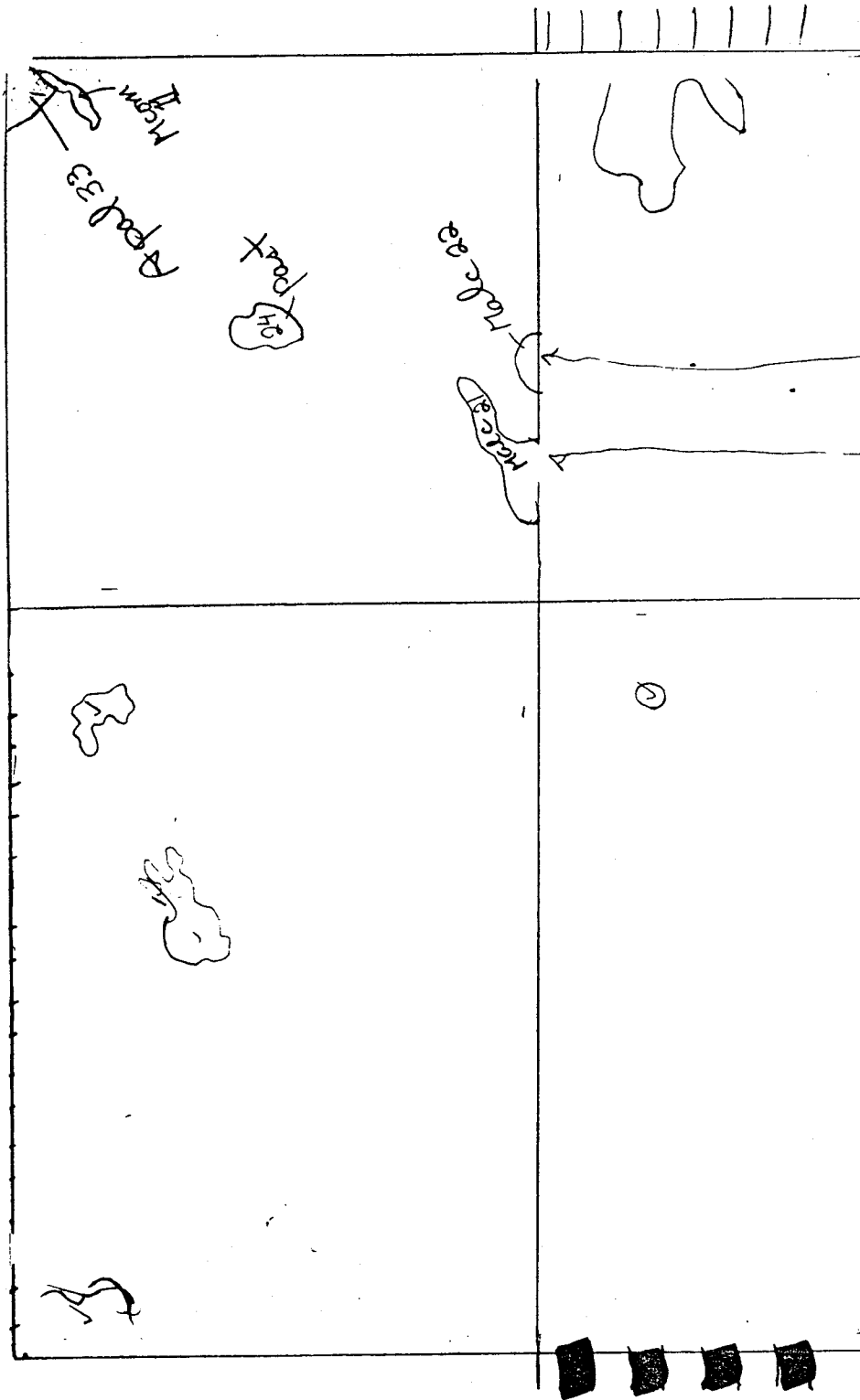
Male 1

12 MAY 90

ILBNP 6

1. Male 644, new SR
Male 45, new SR

2. Male 8, Past 5, Male 10 dead

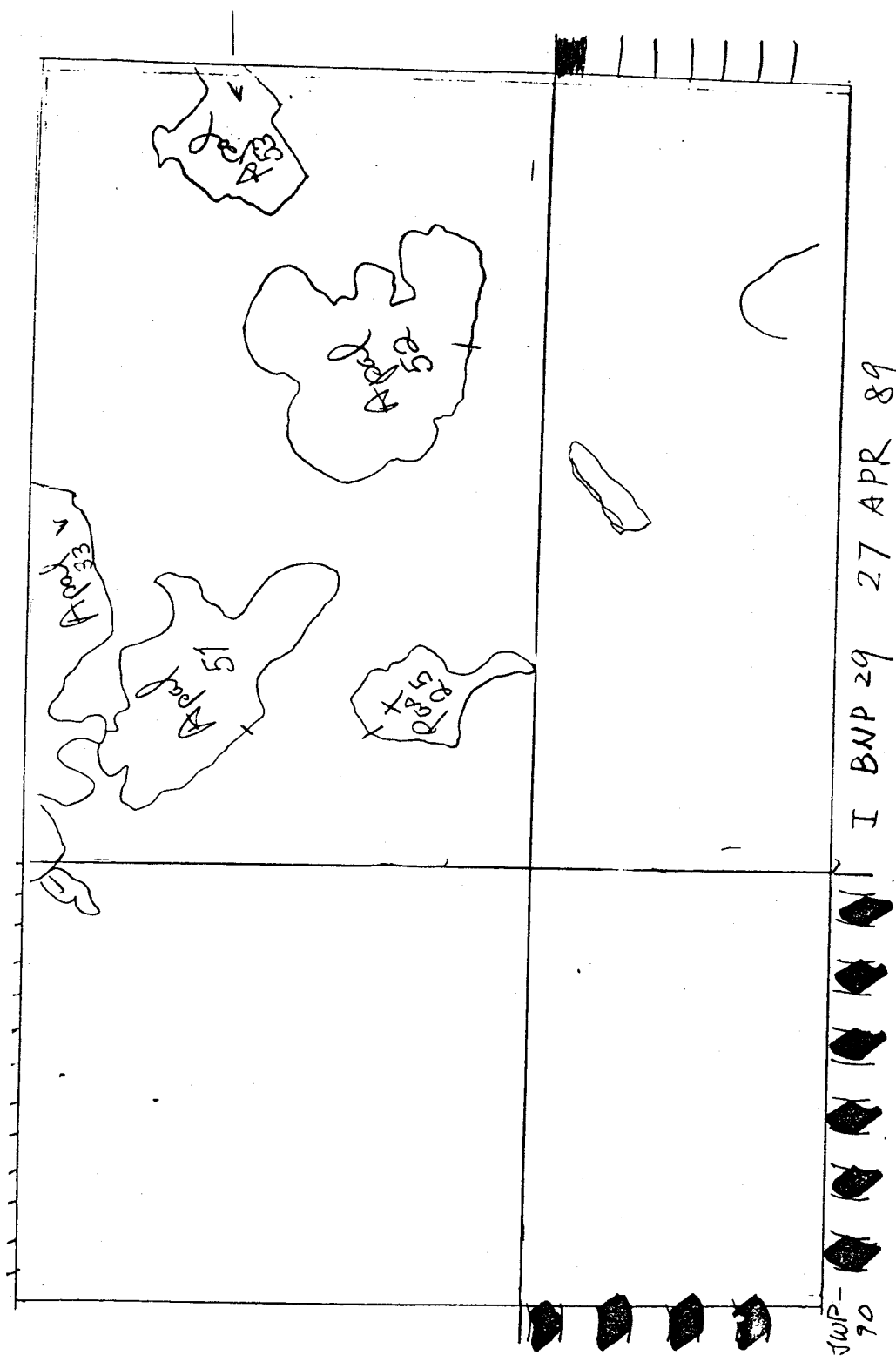


SWP-90 I BNP 28 27 APR 89 Med 21 in 90

Male 7

Distel

PWP-90 (((() () II BNP 5 12 MAY 90



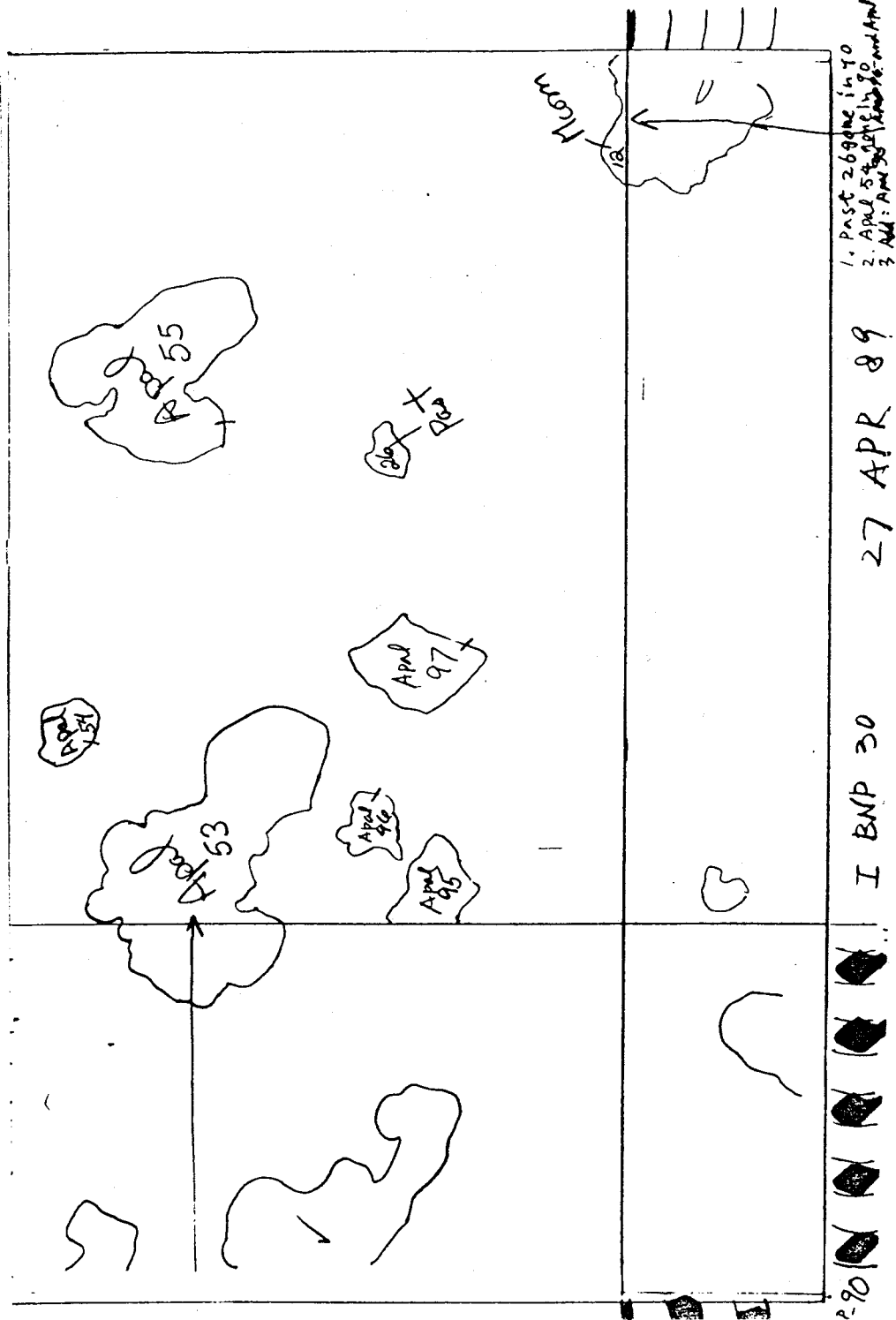
X Dste 1
le
42
43
43

Add Male 42, new SR
43, new SR

12 MAY 90

II BNP 4

SWP-98

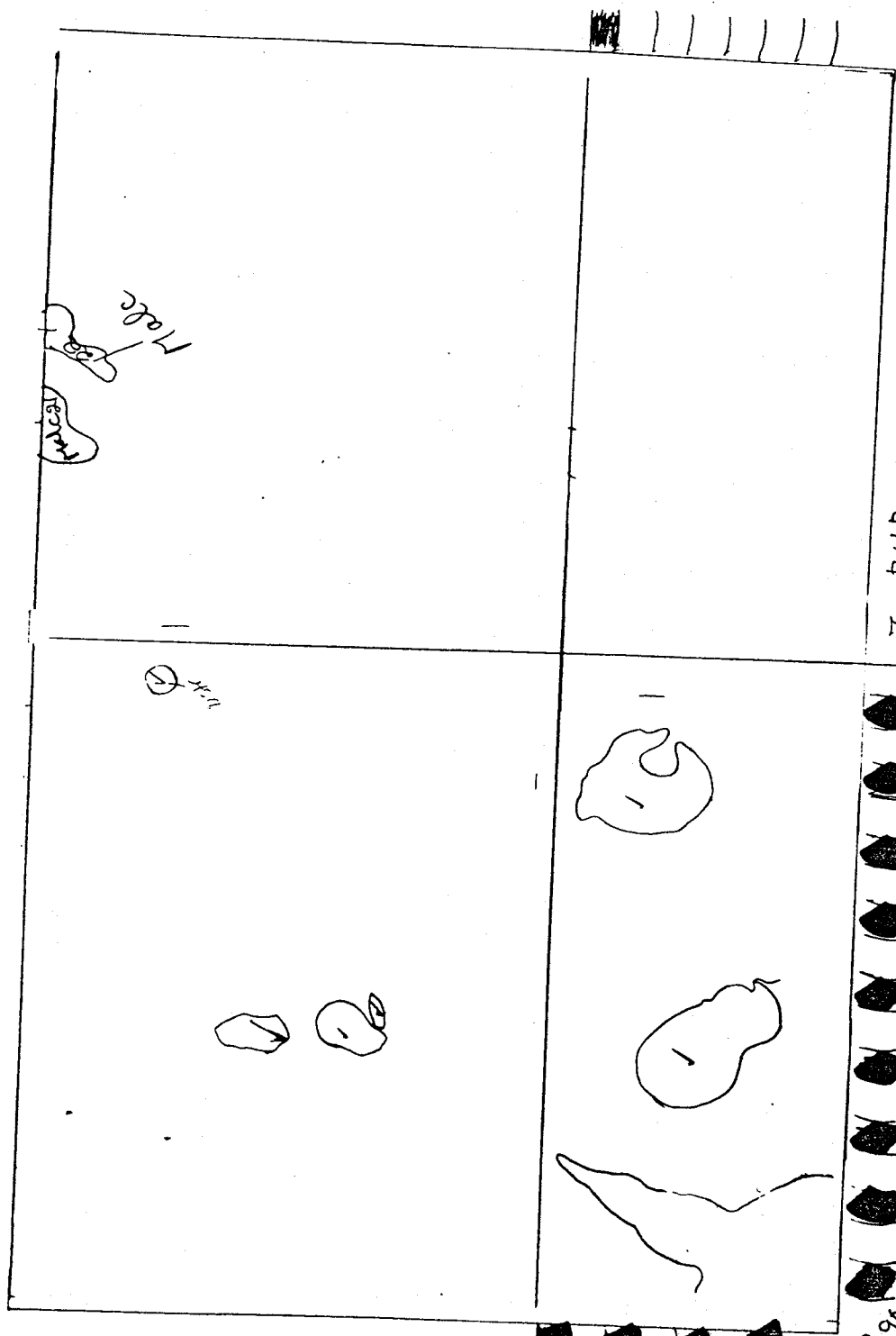


[illegible]

一一一

12 MAY 90

- ✓ 1. Male, 4/1 new SR
- ✓ 2. Male 5 gone DEAD



I BNP 31 27 APR 89

JWR-90

11/1 100/1

♂ Dstc 1

Male 4

♂ AD
Past 1C
Past 1B
Past 1A
Past 2A

Male 39

Male 3

SWP 90 ((((

II BNP 2

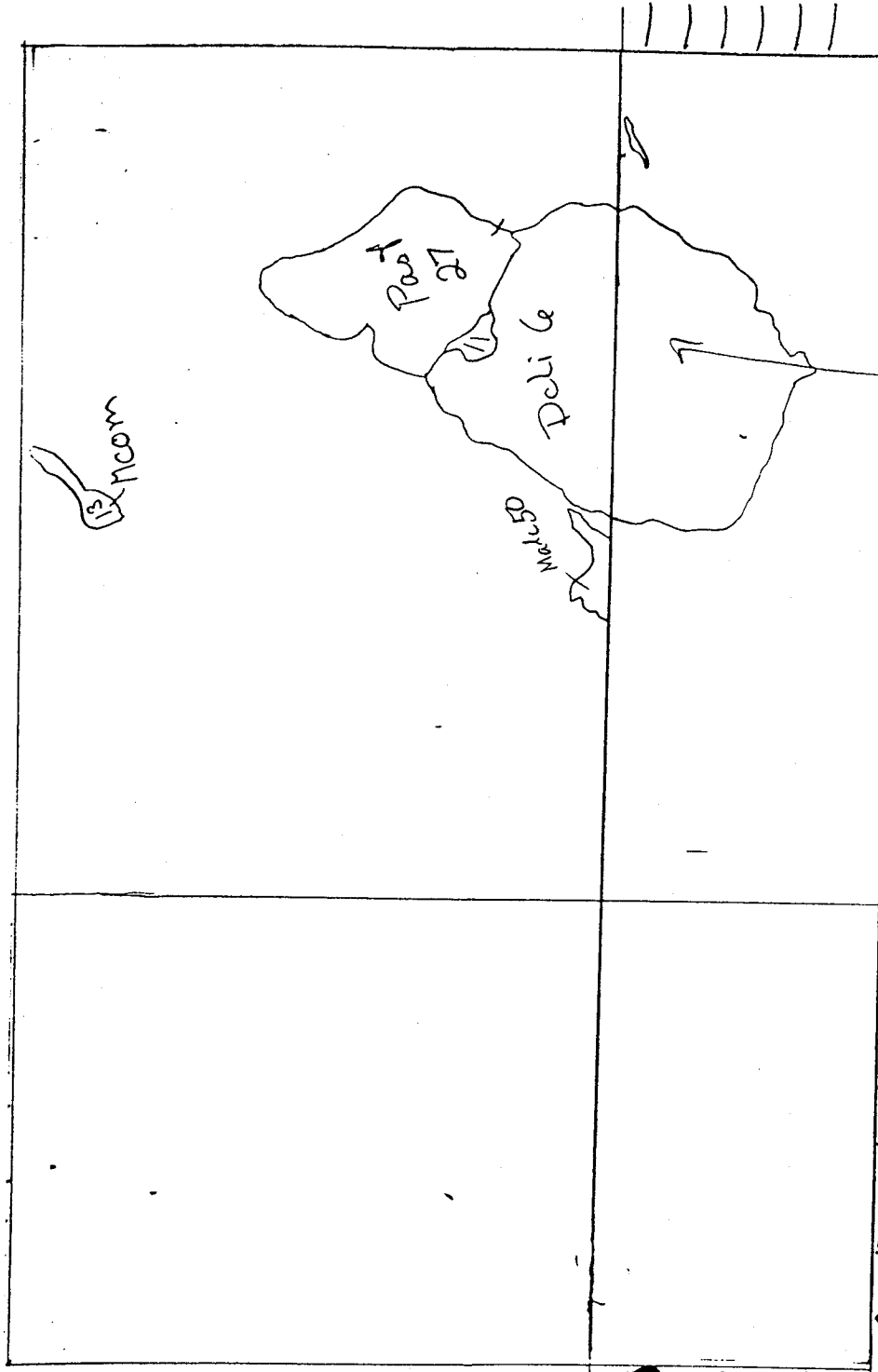
12 MAY 90

Male 40 AND ✓ 1. Past 3, gone DEAD

✓ 2. Add Male 39, new TR

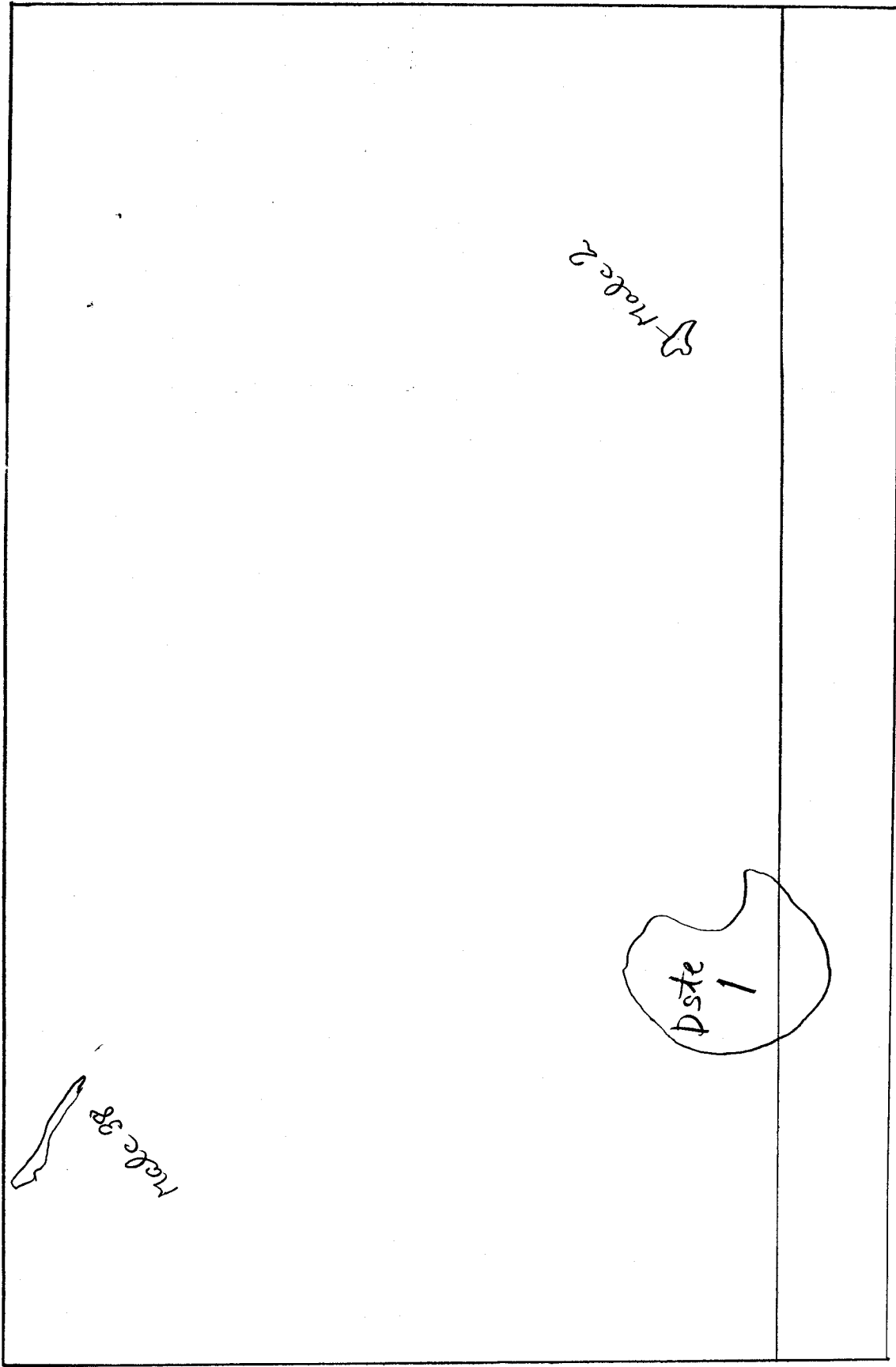
✓ 3. Past 1, split in 90 (A-D)

✓ 4. Past 2, split in 90 (A-B)



JWR 90 | I BNP 32 27 APR 89

1. Add Male 50 here, not gone
2. Add Male 50 here, not gone
Delete 4 Paul 50

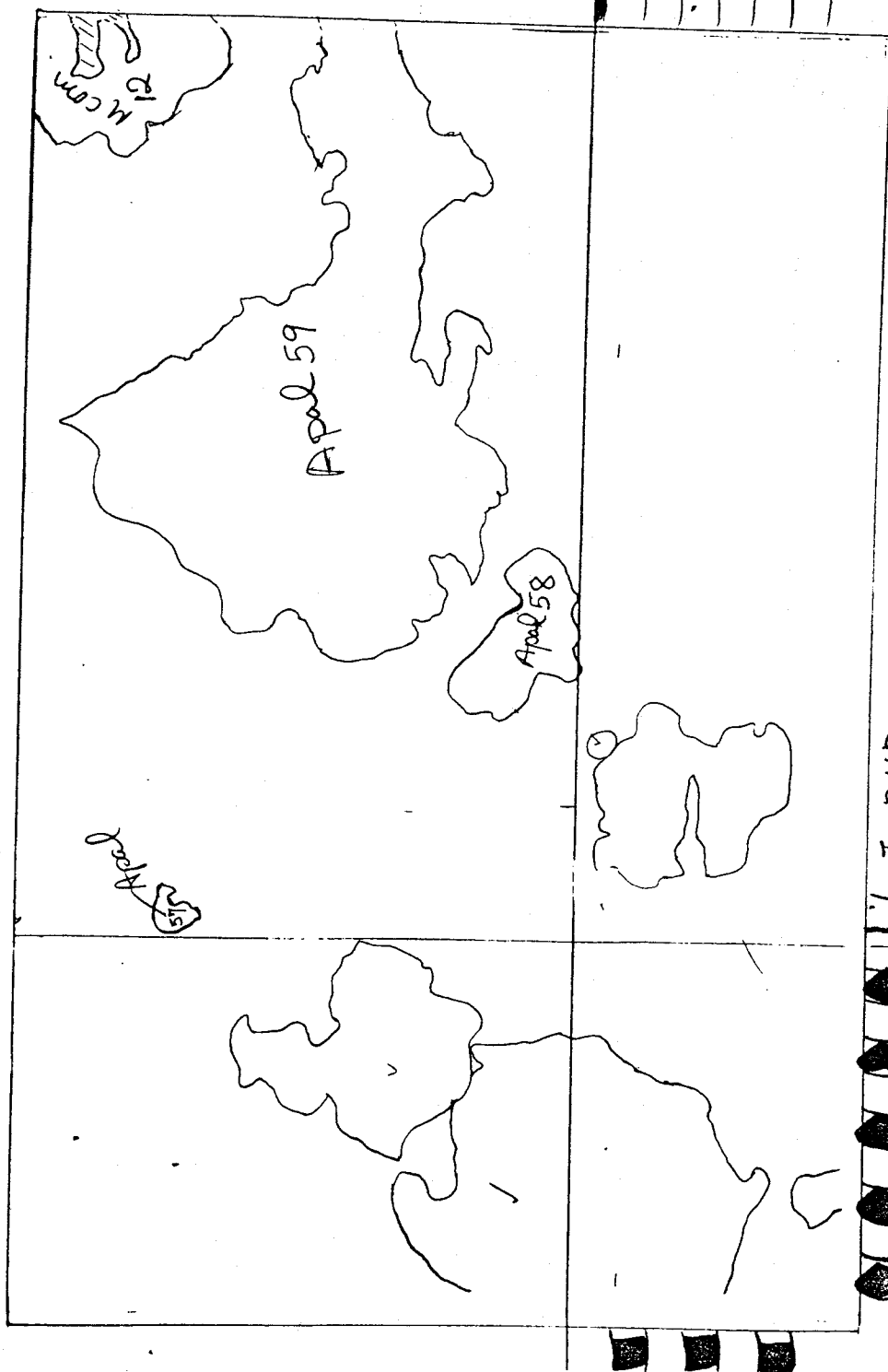


1. Male 1 disappeared ANOL
2. Male 38, new SR

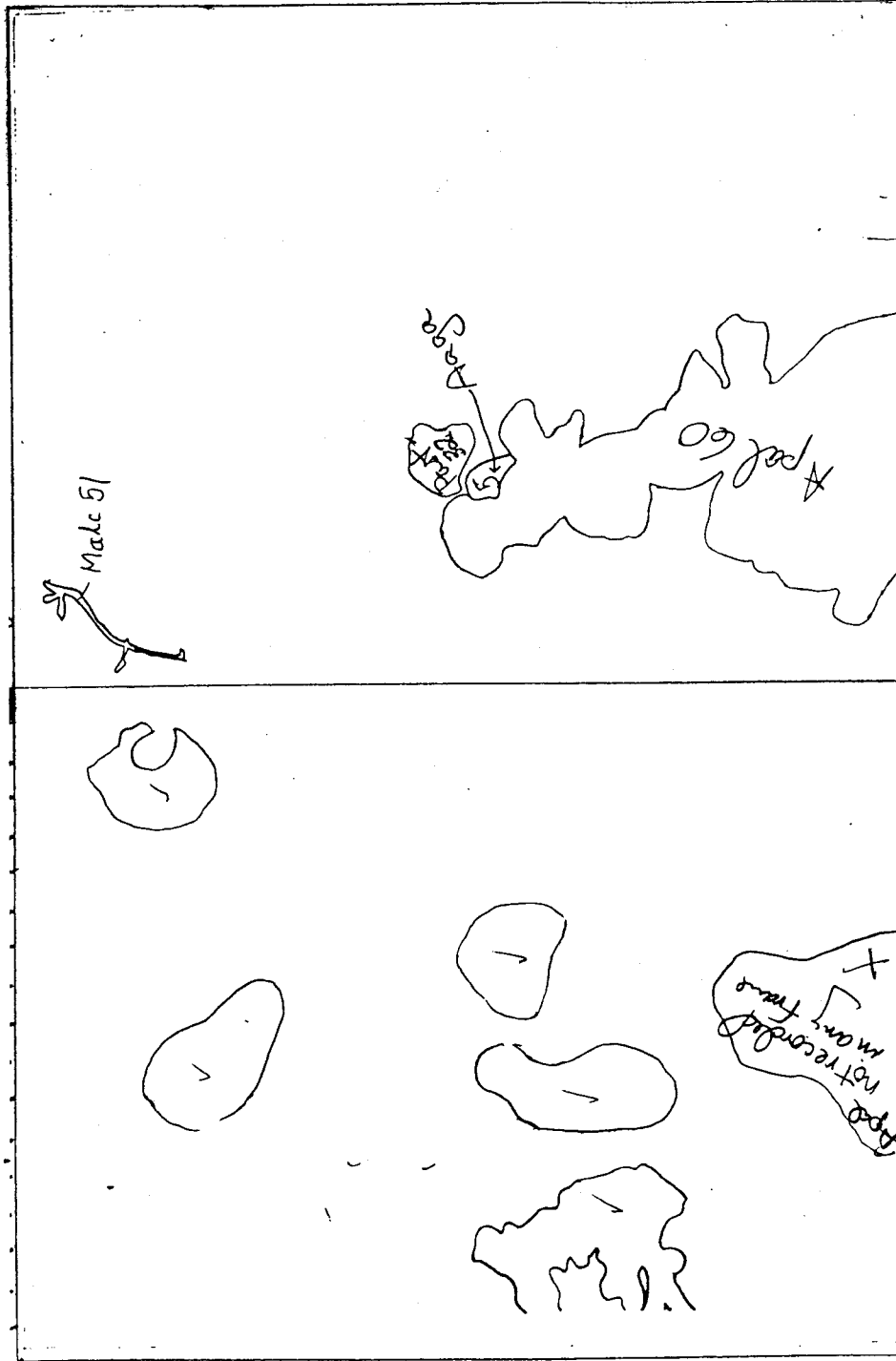
12 MAY 90

II BNP I

JWP-90



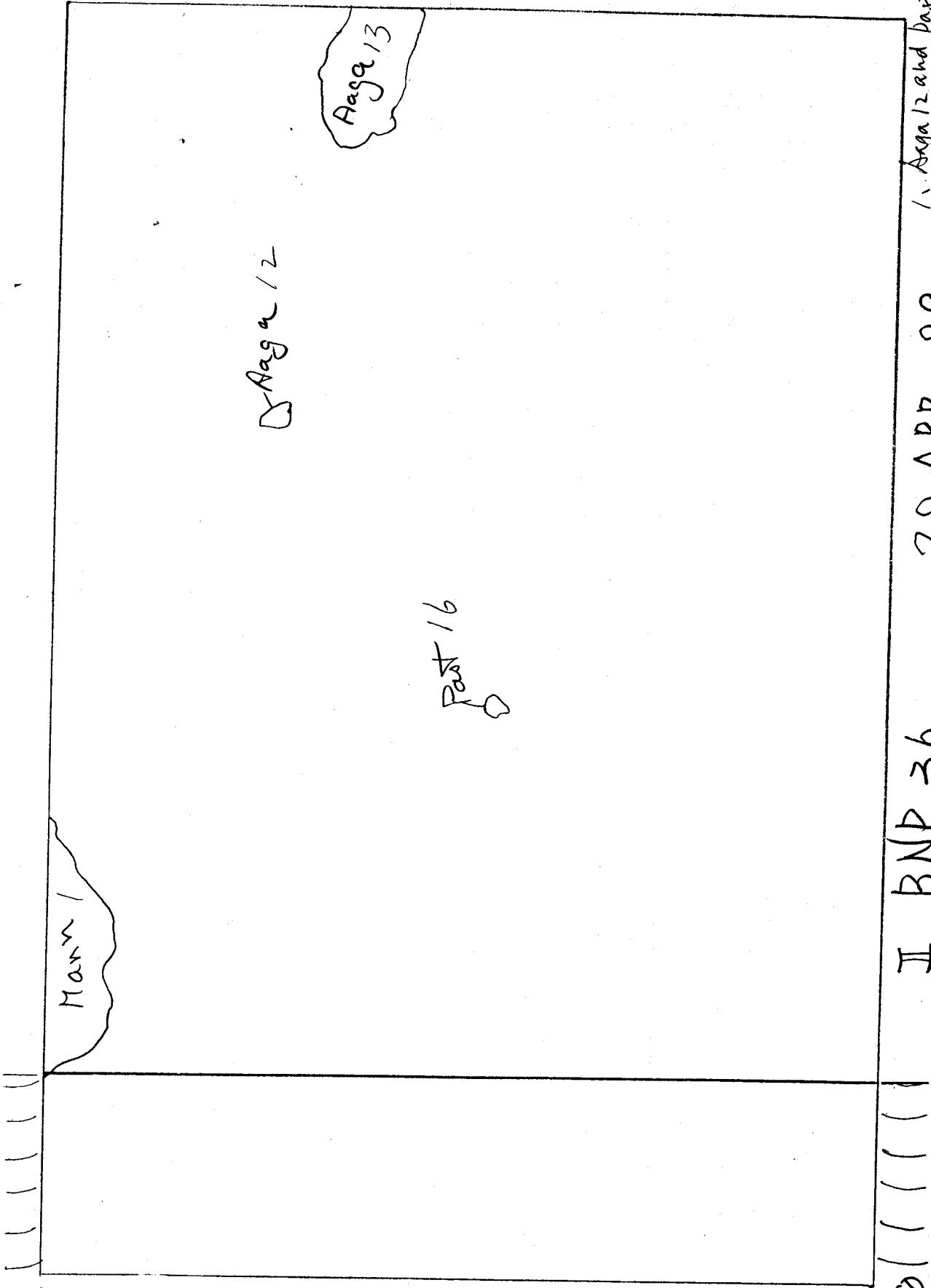
I BNP 33 27 APR 89



I BNP 34 27 APR 89

1. Add: Male 57.

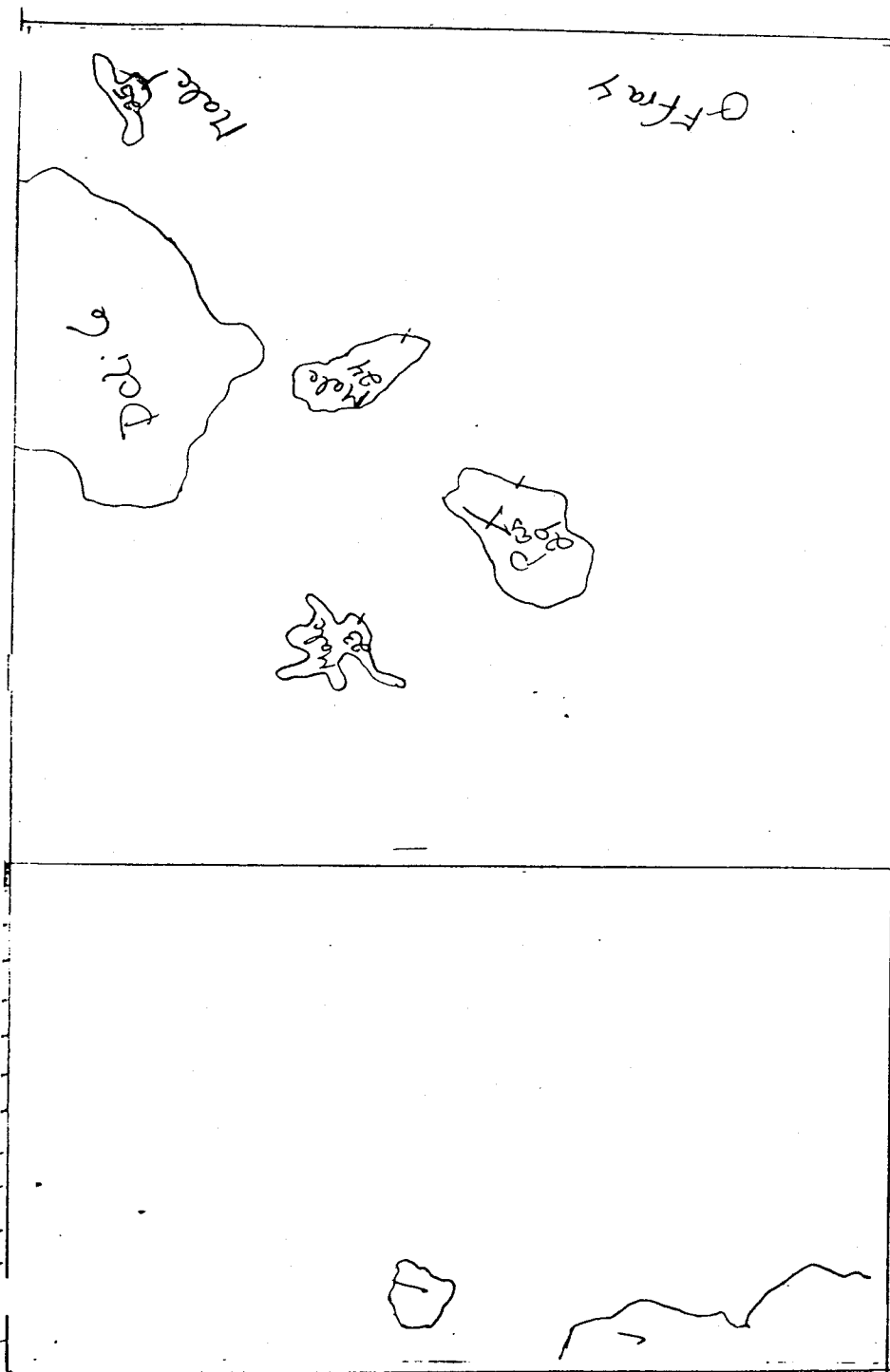
101A-90



28 APR 89

I BNP 36

1. Aaga 12 and Past 16
not seen in 90.



1. Male 25 died in 90

I BNP 35 27 APR 89

06-dmf
Jup-90

|||||

Hcom

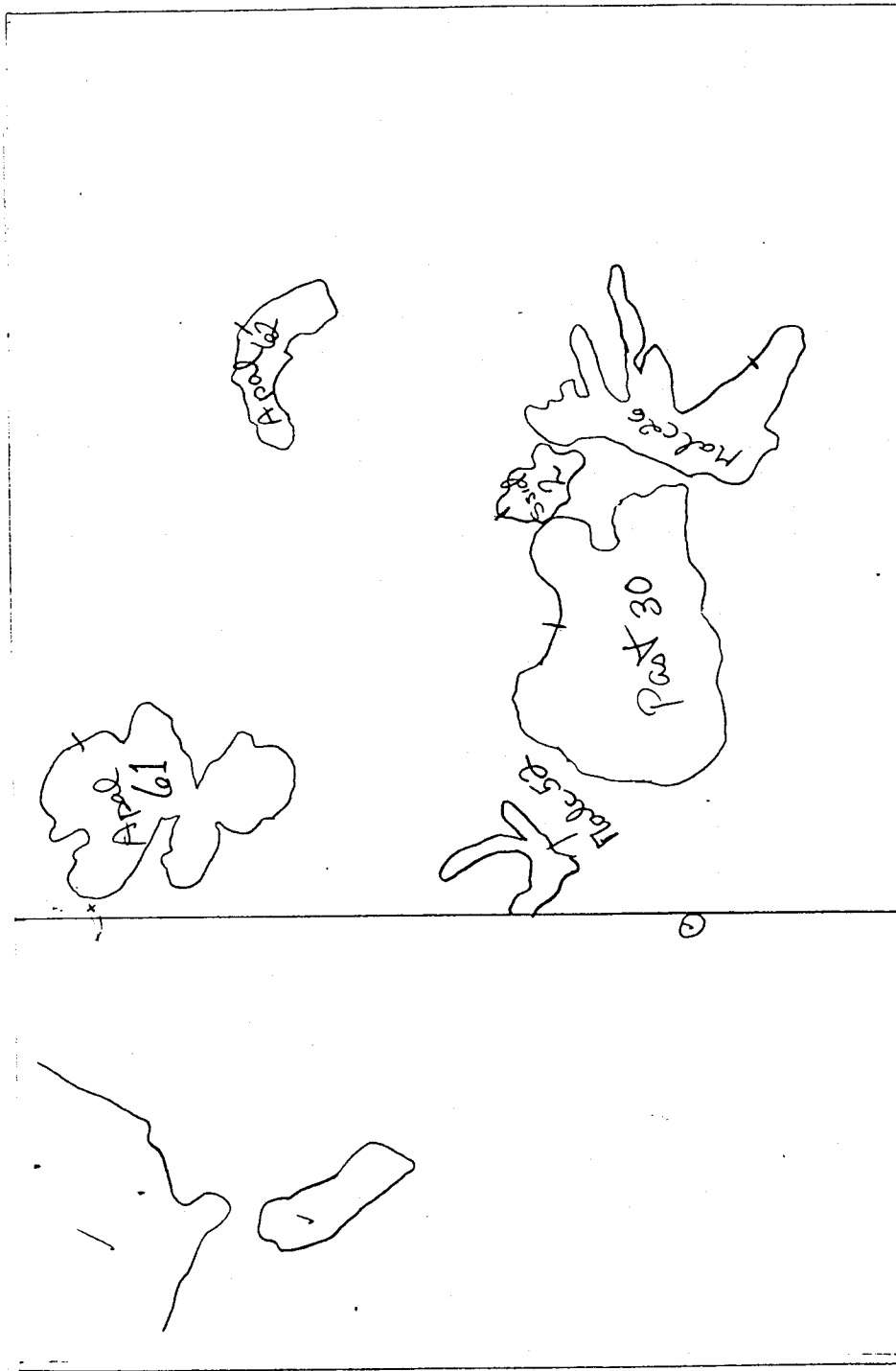
Ppor

BNP⁹⁰ |||||

BNP 35

28 APR 89

1. Ppor 1 not seen in 90



Sup-7D
I BNP 36 27 APR 89 All made 52

Q Kalc 65

II BNP 34

28 APR 89

Add Kalc 65

2MP-90

Agg 11

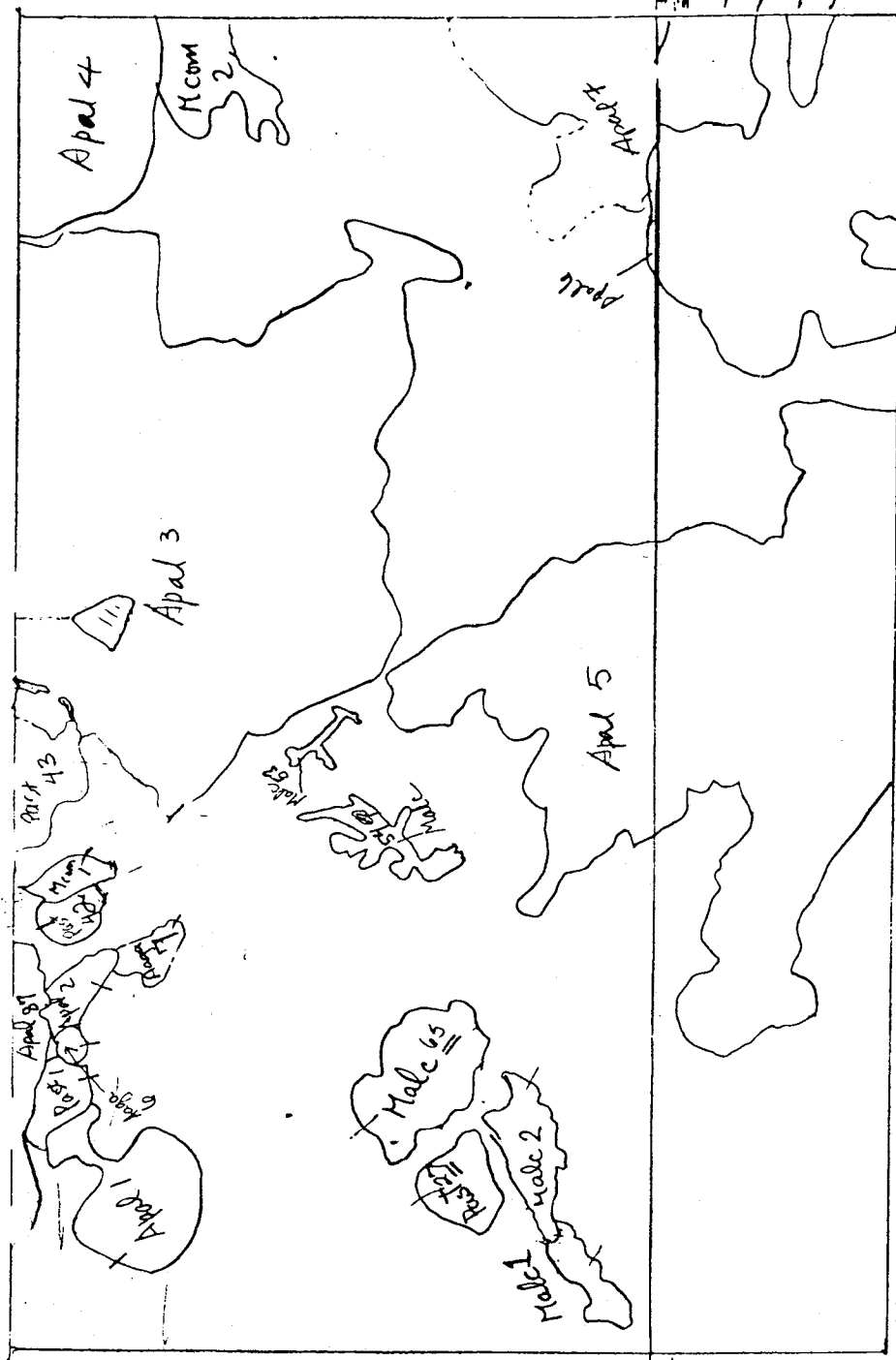
1. Aqa 11 not seen in 90.

28 APR 89

II BVP 33

06-DM

10



2008/06
I BNP 1
Add Aaga N3
Aaga N4

Add: April, = 87
Divide April 3

MAY 1990

(Survey 1)

26/10
26/10
26/10

Added Male 53 } 27 Sept - 1990
 Part 87 }

Q10 d. 18.11.11 ✓

|||||

|||||

Agar 10

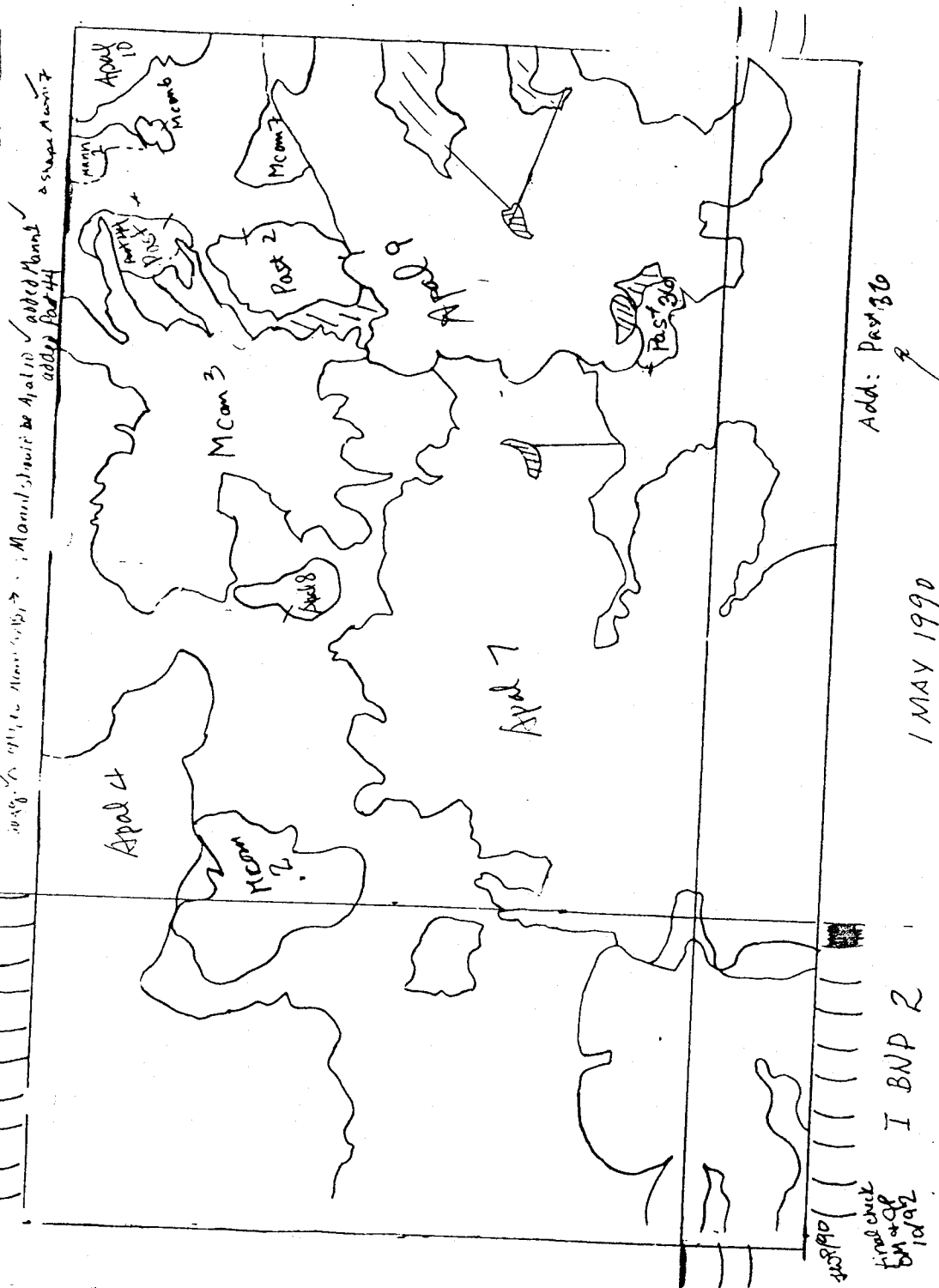
Agar 15

1. Agar 10 and past 15 not seen

in 90

Sw 901 ||||| II BNP 32 28 APR 89

|||||



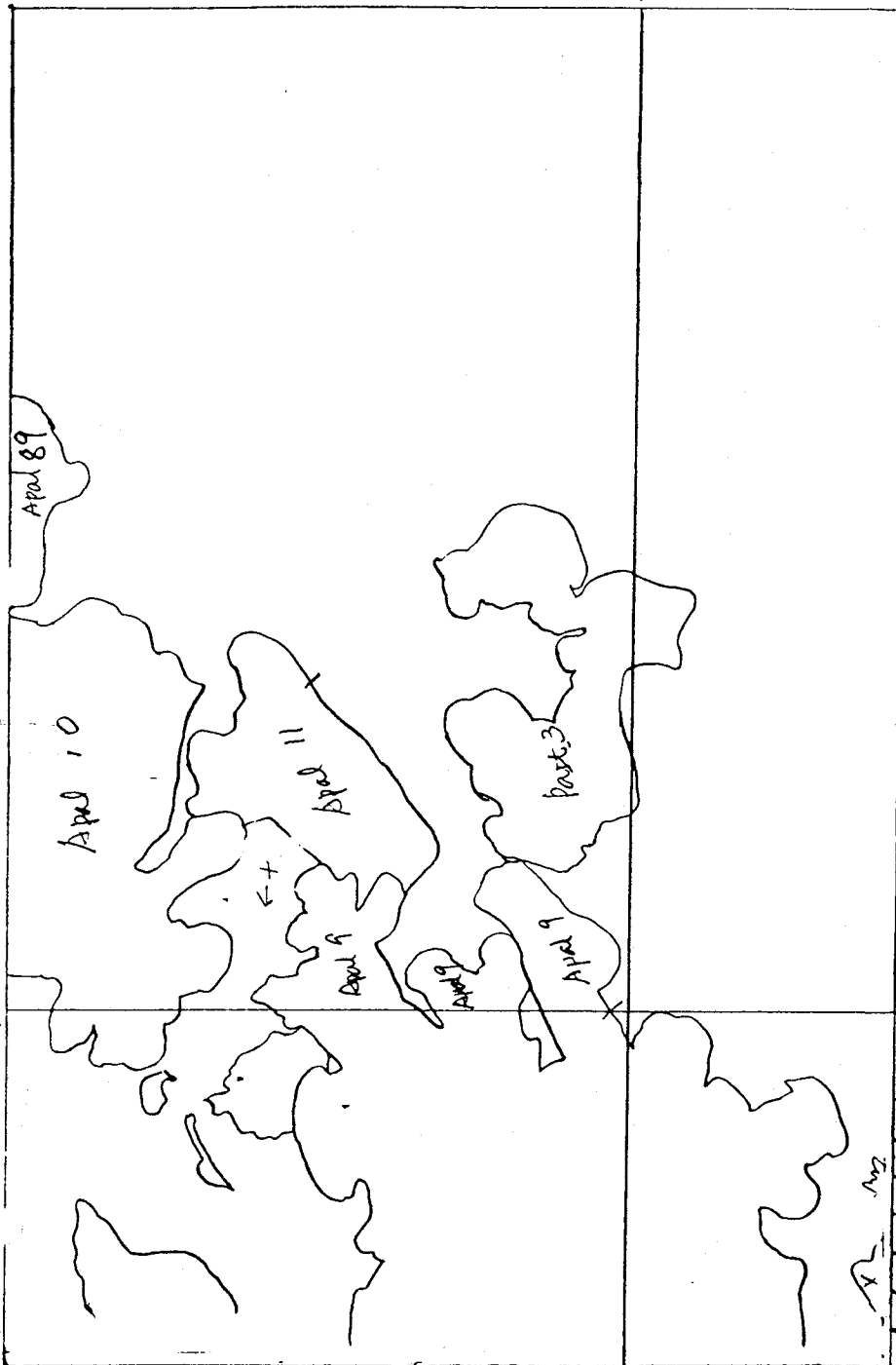
* not new; give # to 89 along

MP 11-18-92

3-5-10

1. Made 36, 37 are the same colony.

JUN 50 / I I I I I I I I I I . II BNP 3 | 28 APR 89



Add: April 89

1 MAY 1990

final check
OK + GP
10/10/92

MP 11-18-92

FLVP

A hand-drawn map of the Hawaiian Islands, oriented with the main islands on the left and the smaller islands on the right. The map is enclosed in a rectangular border. Handwritten labels in ink indicate bird sightings:

- Top left:** "Ad 6" (Adolescent 6)
- Top center:** "Male 4" (Male 4)
- Top right:** "Ad 12" (Adolescent 12)
- Middle left:** "Ad 15" (Adolescent 15)
- Middle center:** "Ad 1" (Adolescent 1)
- Middle right:** "Ad 13" (Adolescent 13)
- Bottom left:** "Male 3" (Male 3)
- Bottom center:** "Ad 8" (Adolescent 8)
- Bottom right:** "Ad 14" (Adolescent 14)

The map shows the outlines of the islands, with the main islands on the left and the smaller islands on the right. The labels are written in a simple, handwritten style.

1 MAY 1990

I BVP 4

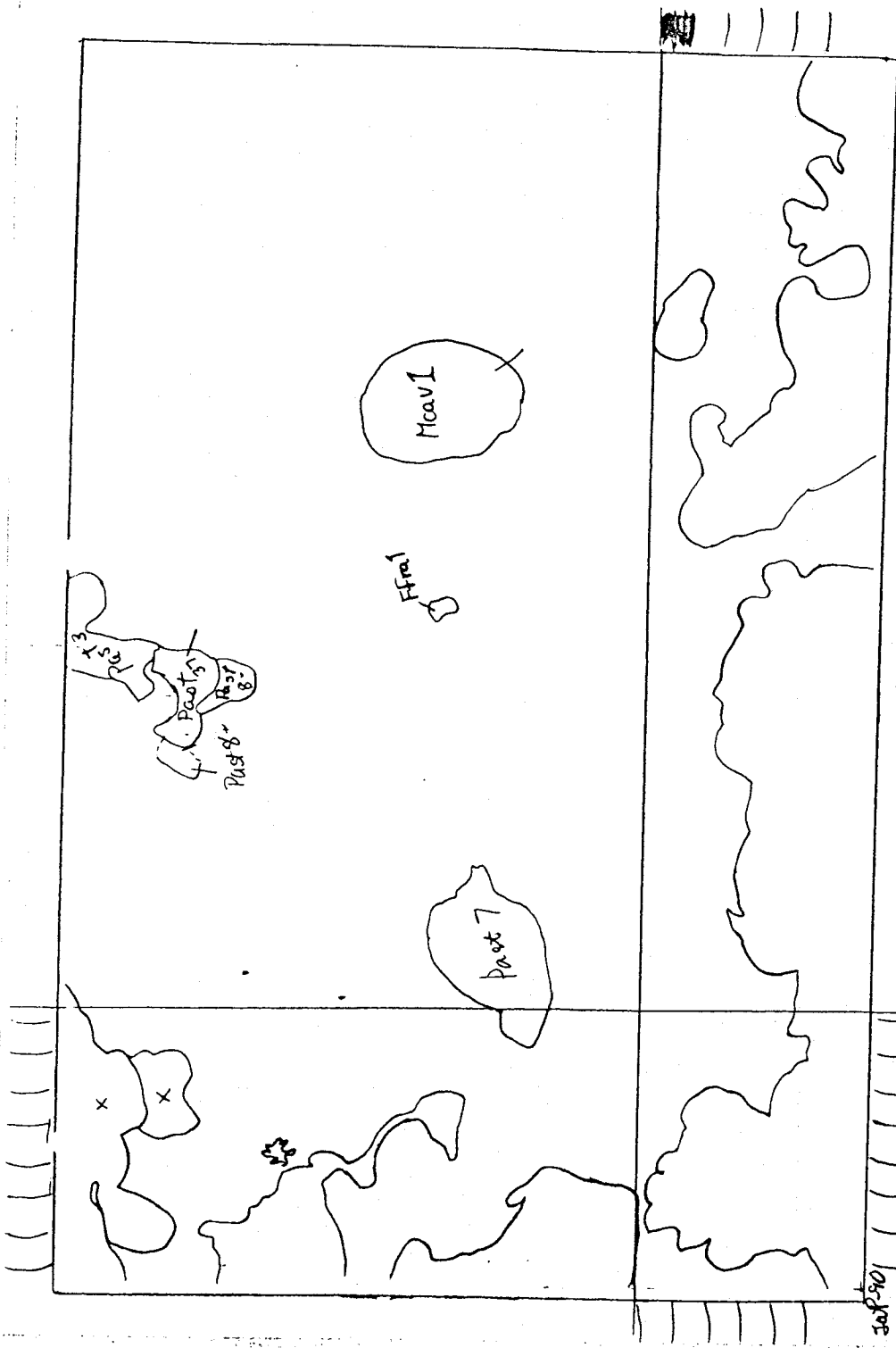
10/29/20
 OM + GP
 findack
 10/29/20

11-20-92

Male 32



II BNP 28 28 APR 89



1 MAY 1970

BNP 6

MP 11.20.92

11

Aaga

Handwritten notes on the left margin:

Page 31

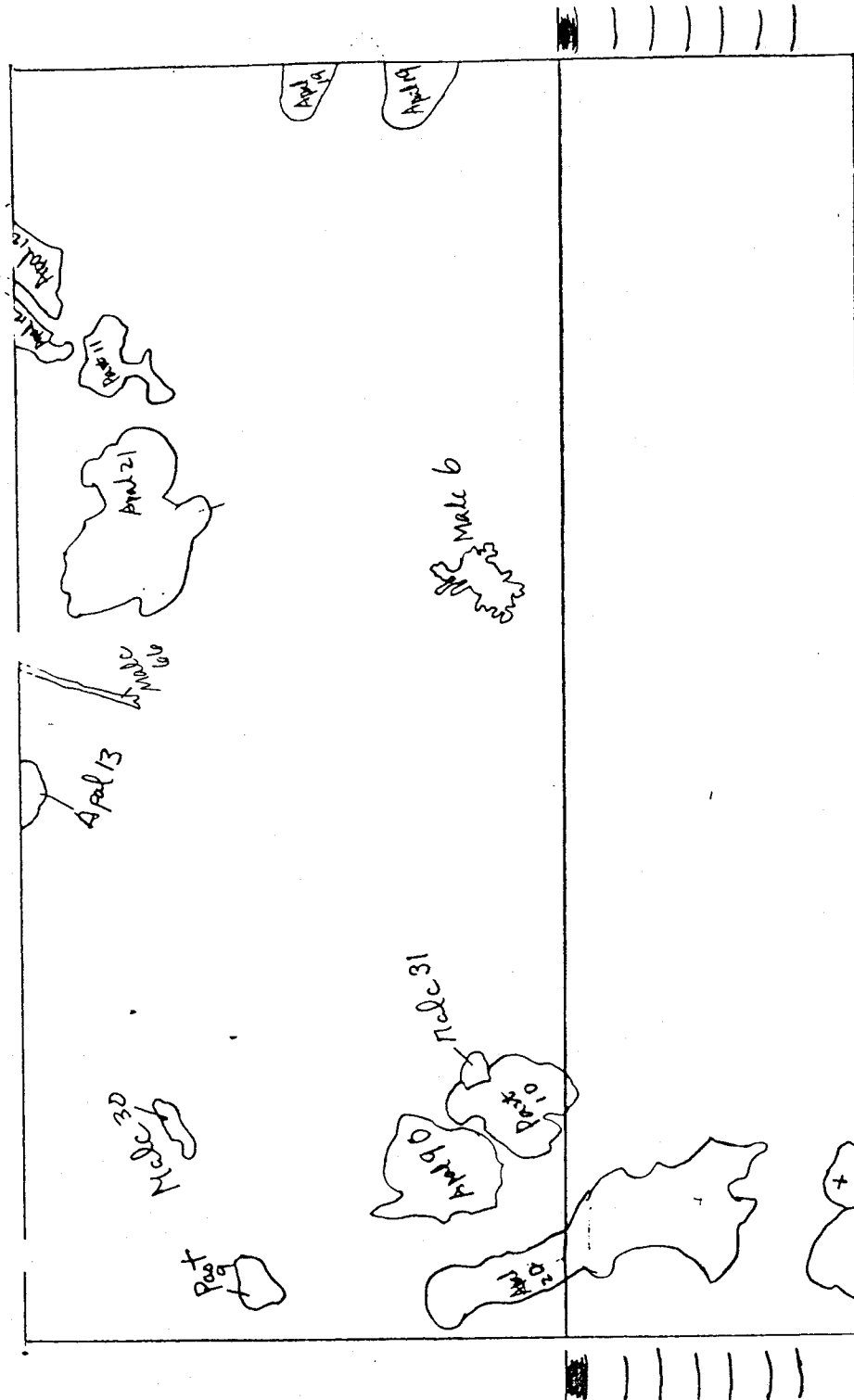
Handwritten signature/initials.

14
X pos

112

10-10-90 111111 I BNP 27 28 APR 89

111111
106ms



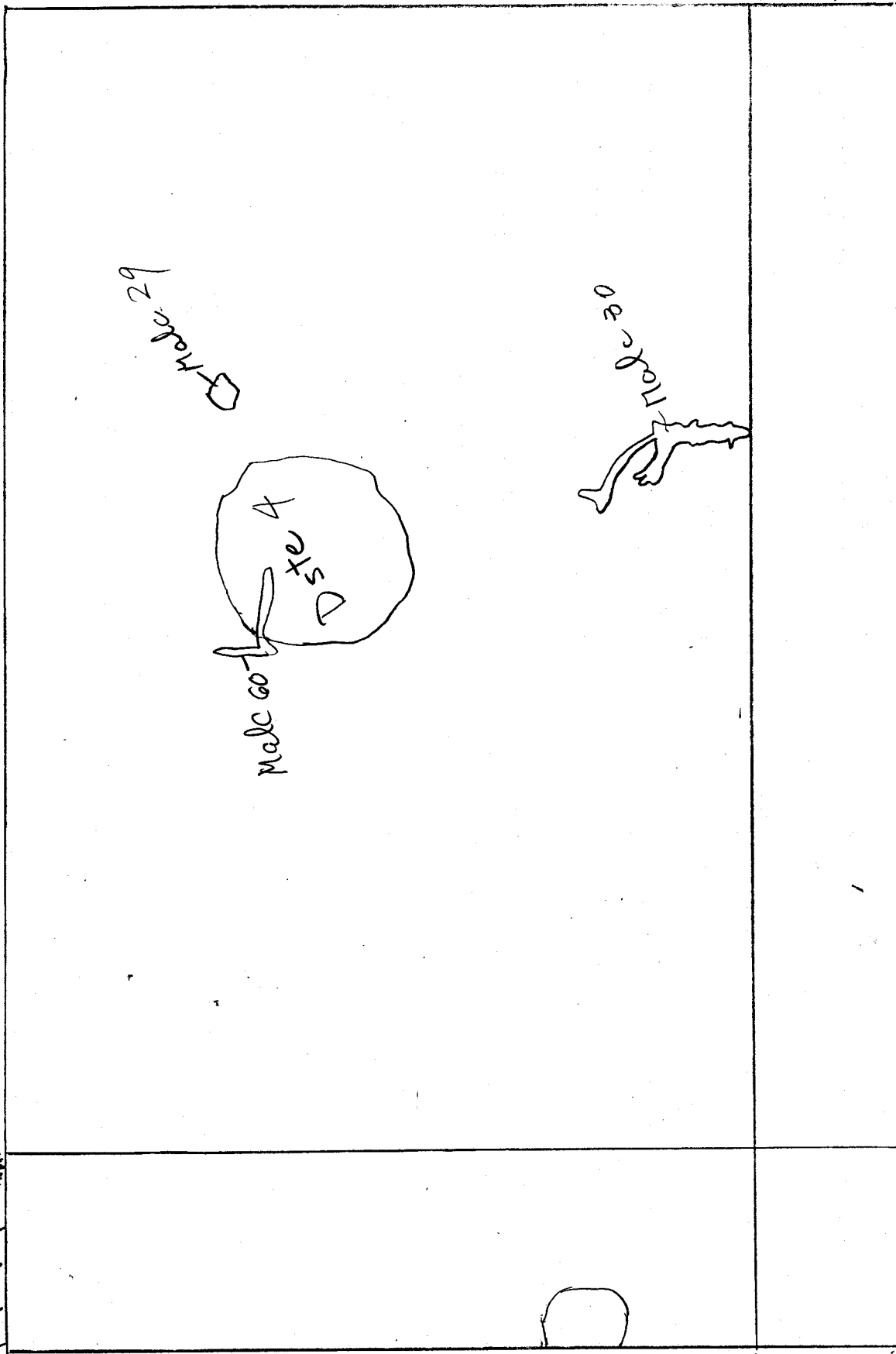
1. Add: April 4
2. Apr 20-7
204-8
add male 66

1 MAY 1990

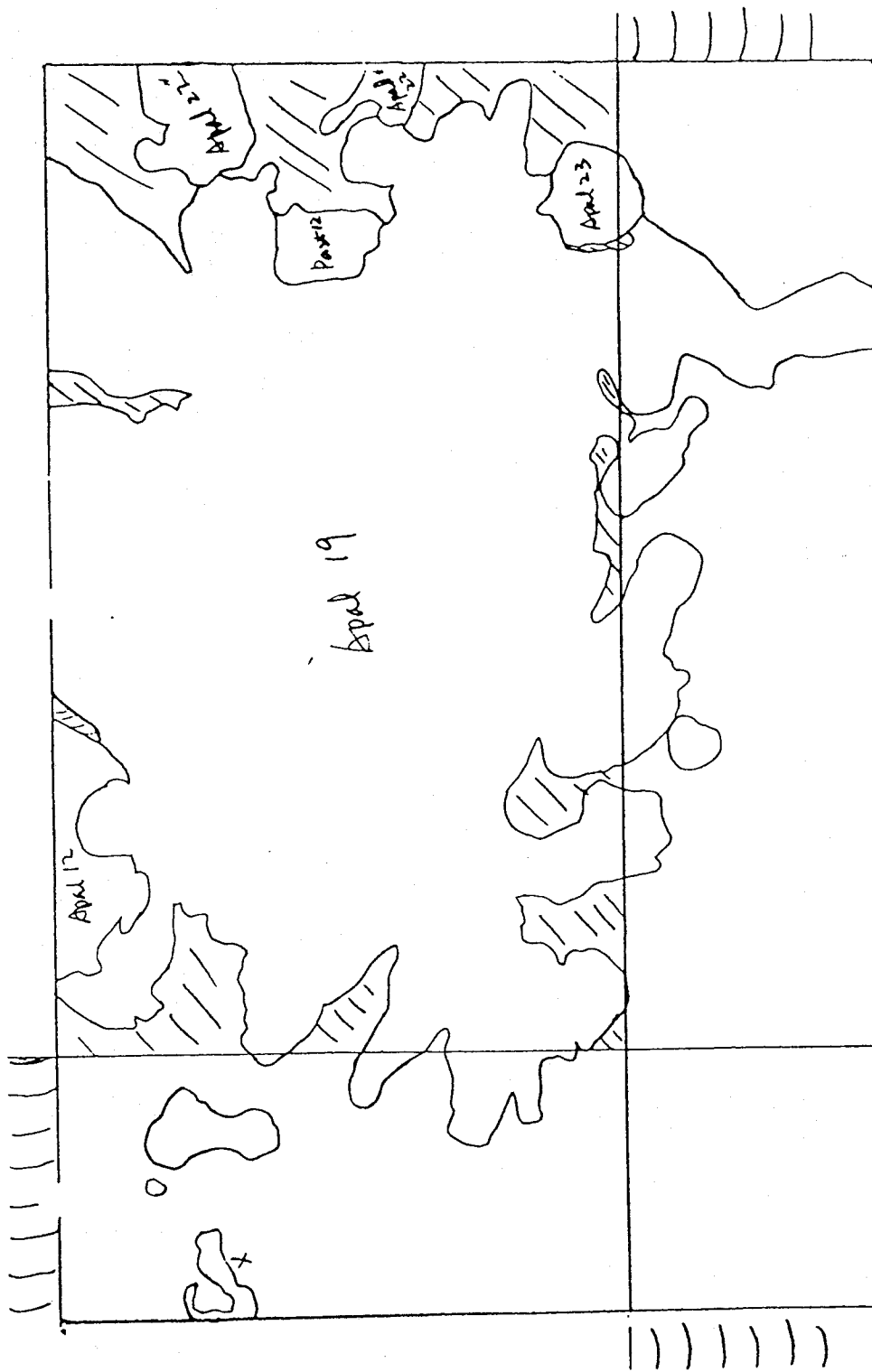
500-90 I BNP 7

500-90 I BNP 7
500-90 I BNP 7
500-90 I BNP 7

1/20

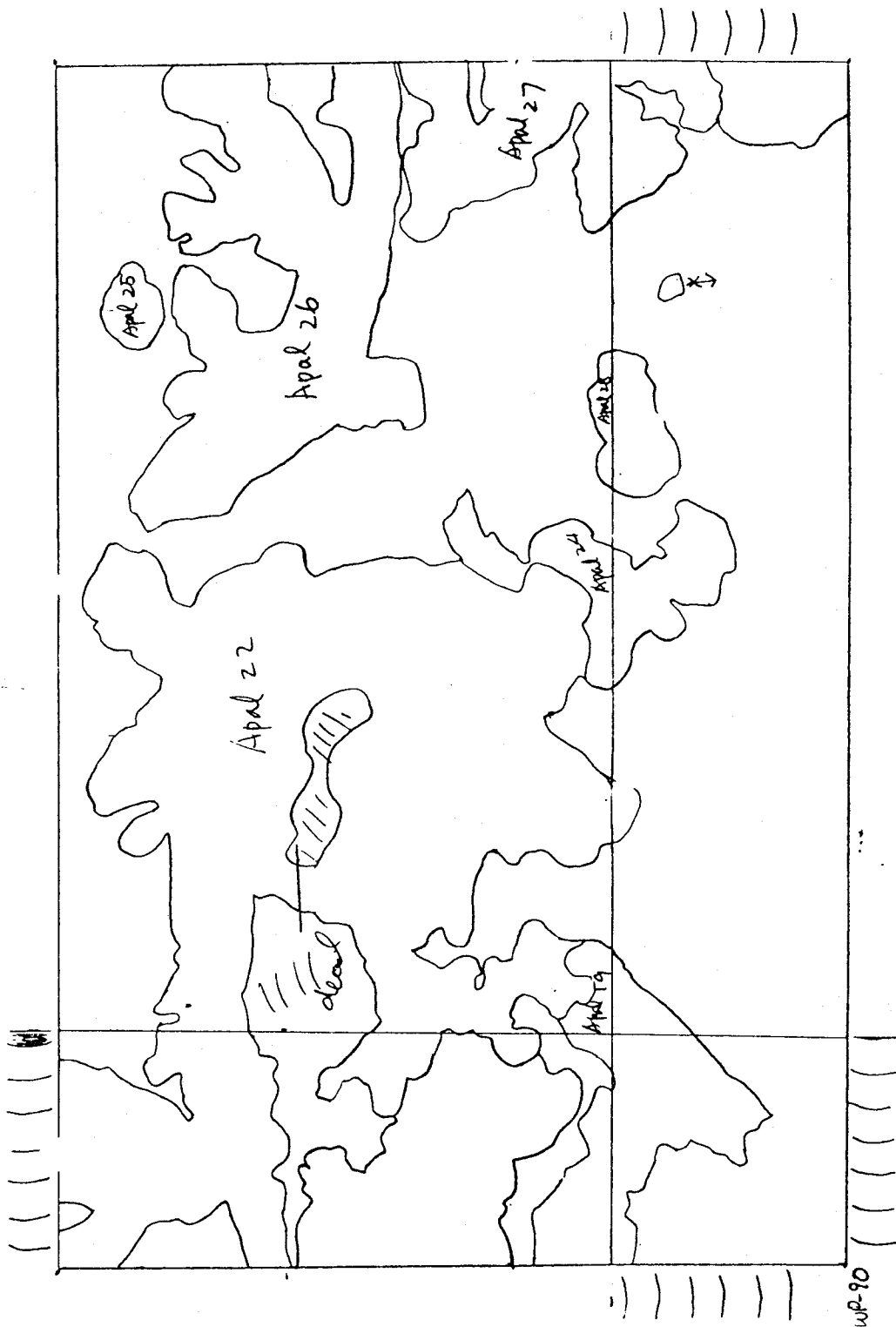


SWP 90 (1111) II BNP 26 28 APR 89 Add Malc 60.



1 MAY 1990

SWP-1790 I BND 8



11/20

Model 28



I BNP 24 28 APR 89

JWP-50

[illegible]

1. Apaluz⁸⁸ appeared ✓ I BNP 10 1 MAY 90

1. April 28⁸⁸ appeared ✓
2. April 29 disappeared ✓

4. Add: $DeLIC5 = 9$

2017-01-01

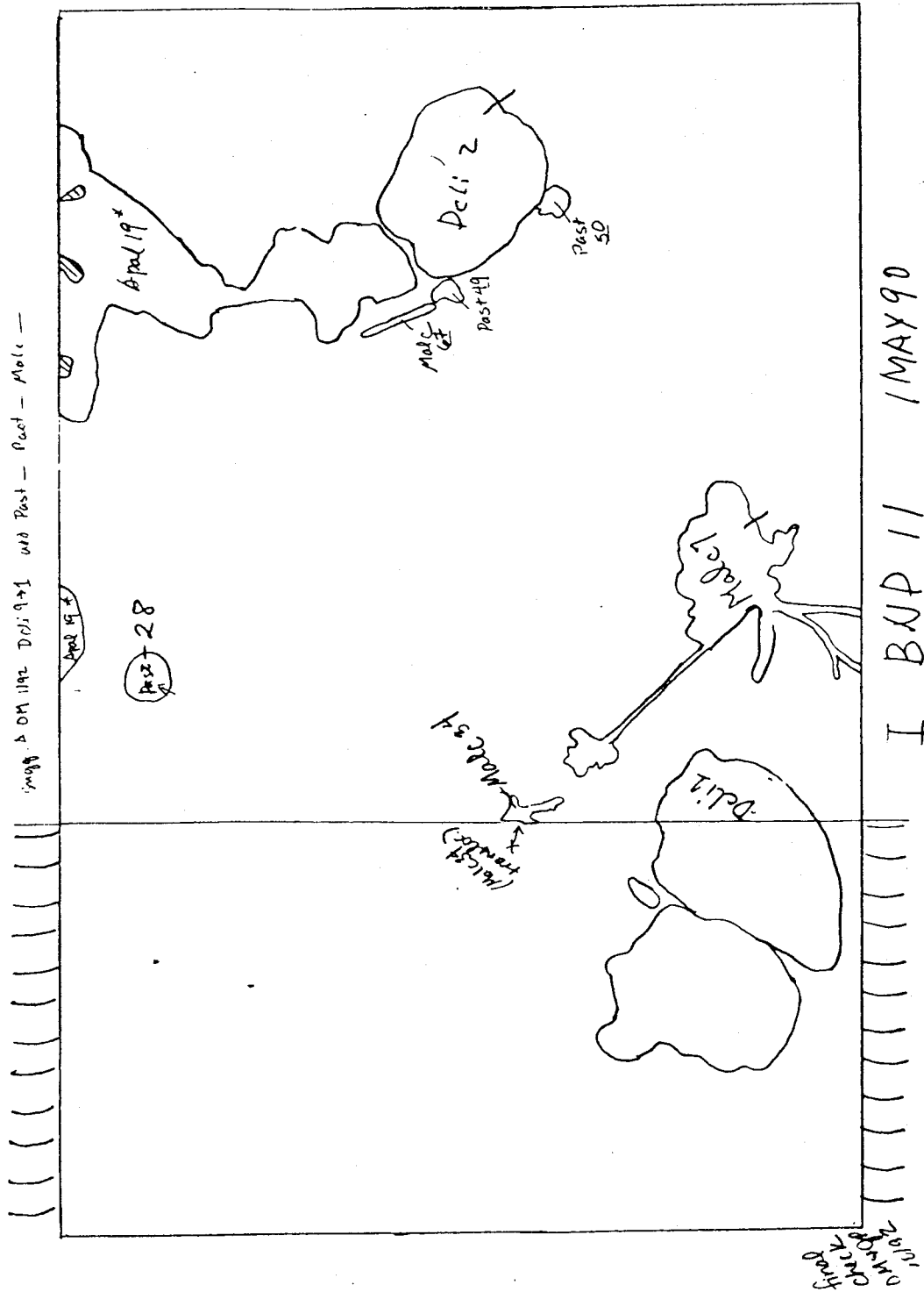
✓ 12.1.12

WINK

Post 11
Post 12

Post 13

SEP-90 (M) I BNP 23 28 APR 89



APR 12 1990

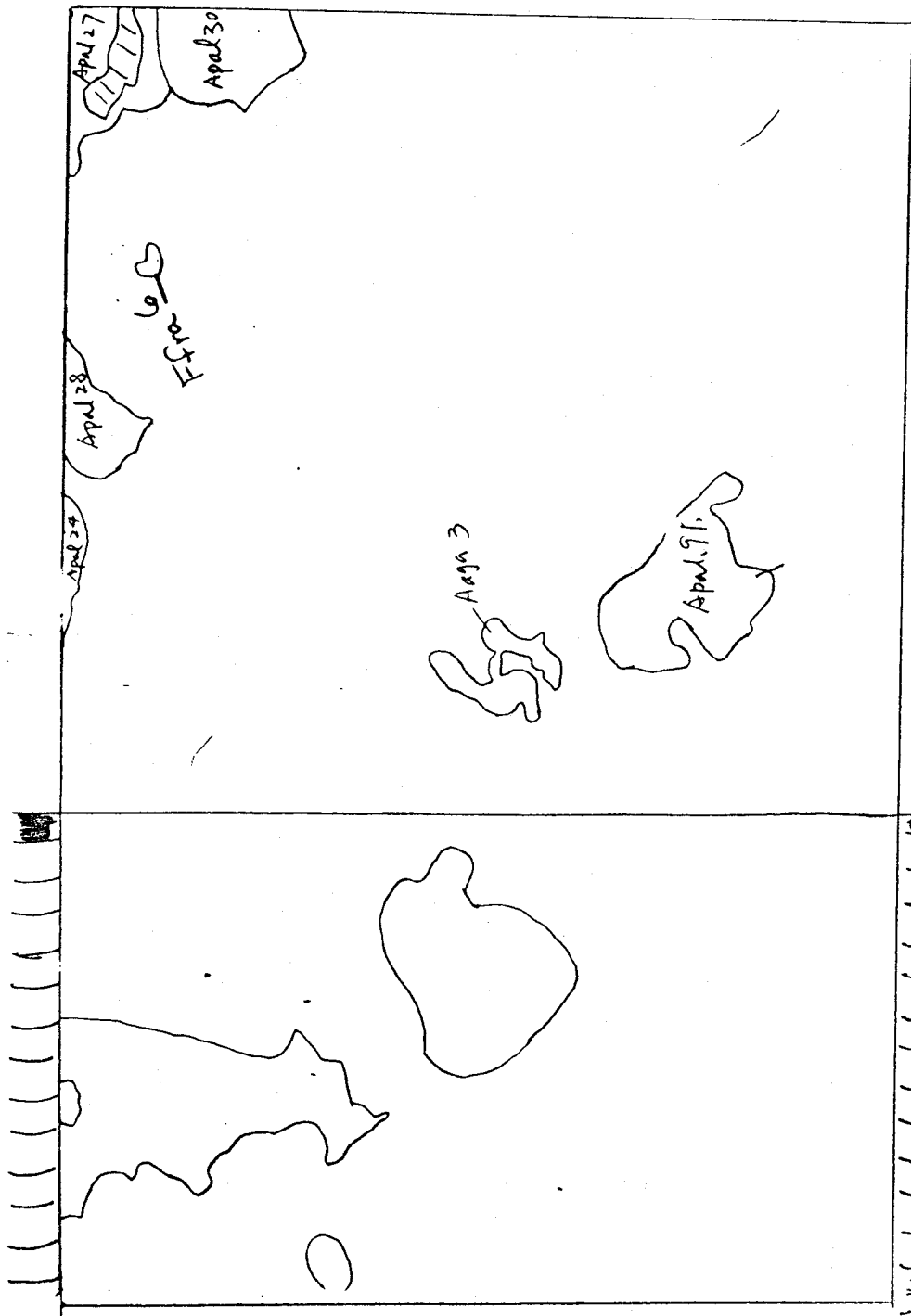
28 APR 89

II BNP 22

JUP-90

Male 21

4
A 2099



1 MAY 90

I BOP 12

1. Add: April 7

1. Add: April 7

Male 35

Male 37, Halimata? add Male 35

Male 35

Male 38

Male 88

Total

Past 15

Male 35

Past 36

89

Past 40

1. April 31 disappeared
2. Add = Past 39, 40
3. Add Male 35

1 MAY 90

I BNP 13

New Male 35, 36, 37 new

WSP-90

IMP 12-2-10

2
F. 5. 10

Q Ffra 1

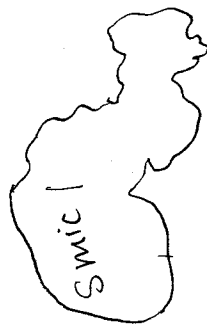
1. Ffra 1 not seen in 90

sur 2d

|||||

II BNP 20

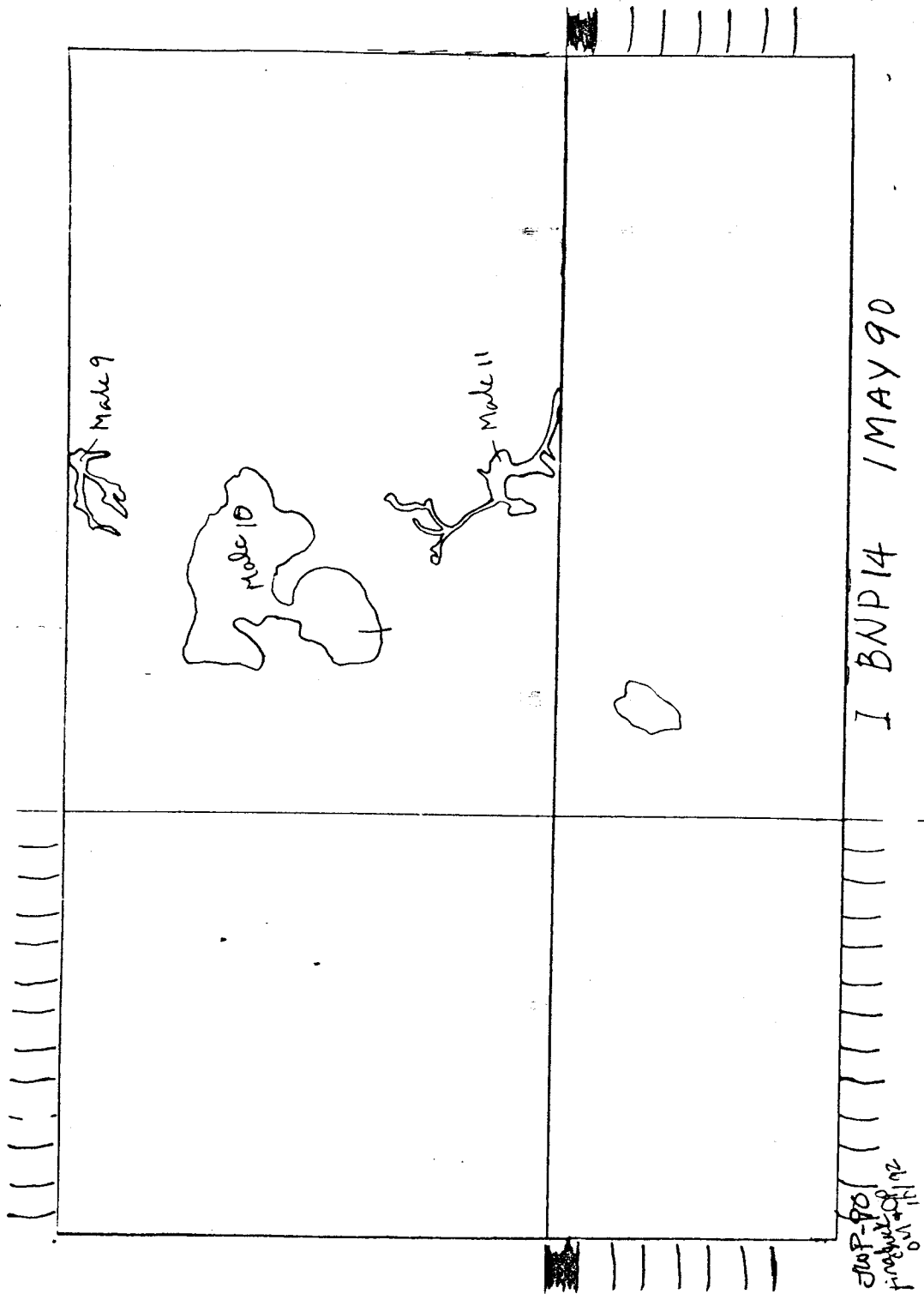
28 APR 89



28 APR 89

BNP 19

JWP-90



AP 12-2-90

Post 10

SWP
90

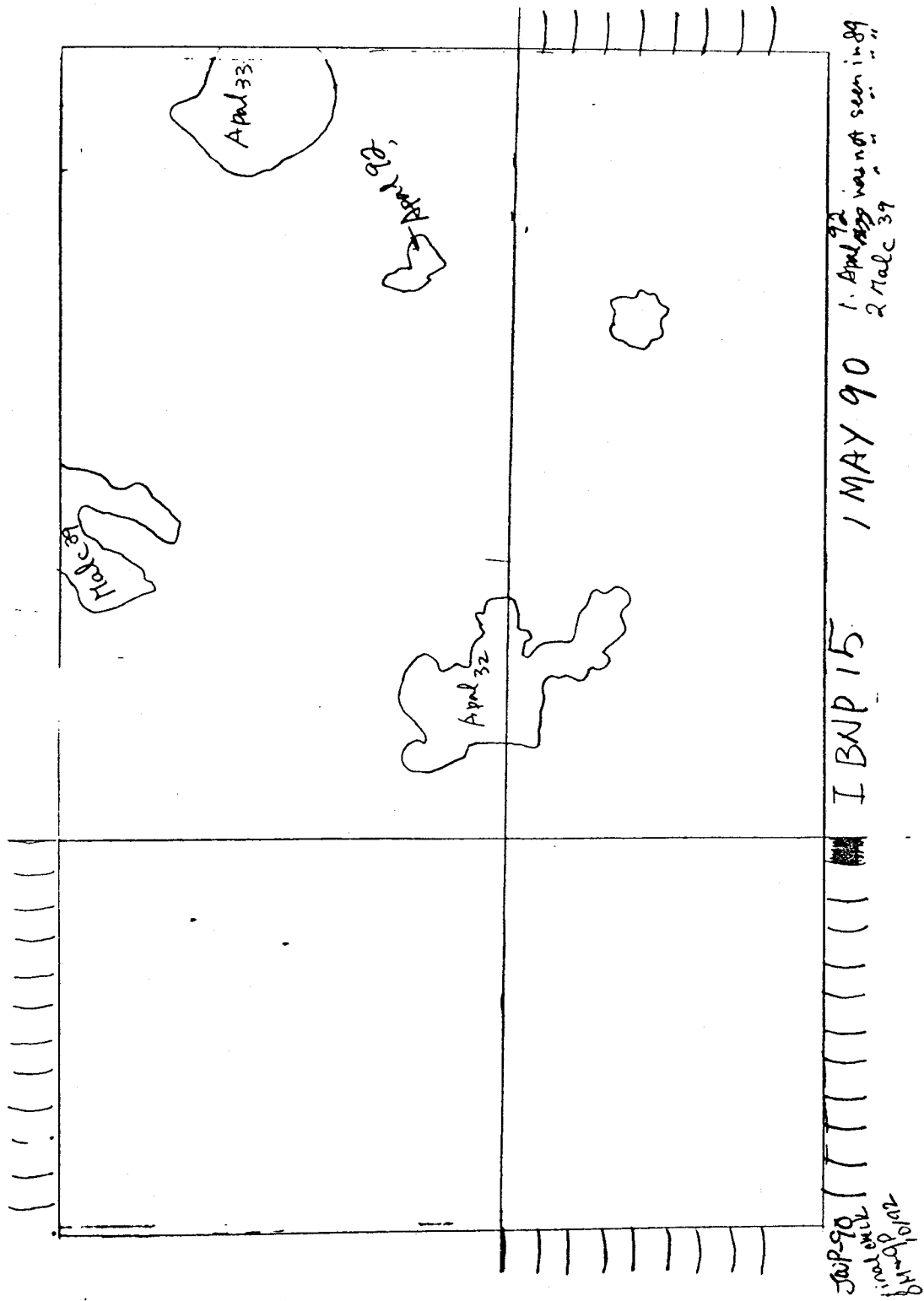
(/ / / / /)

I BNP 18

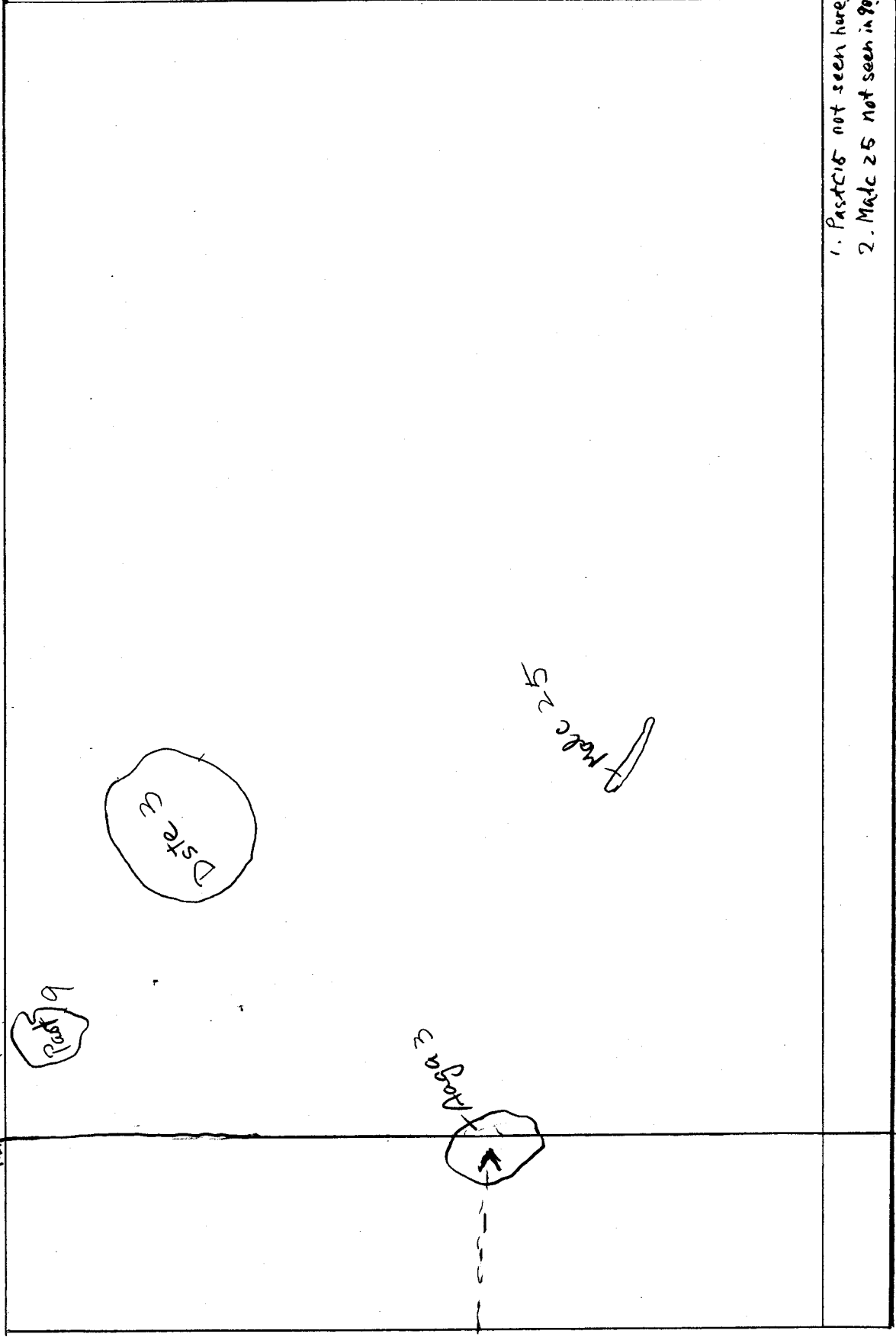
28 APR 89

II BVP 18

28 APR 89



BNP 12-2-92



- 1. Pastoris not seen here
- 2. Male 25 not seen in 90

28 APR 89

II BNP 17

JWP-20

[illegible]

Mar 12, 13, 14.
and Apr 4

Pr 21

I BND 16 1 MAY 90

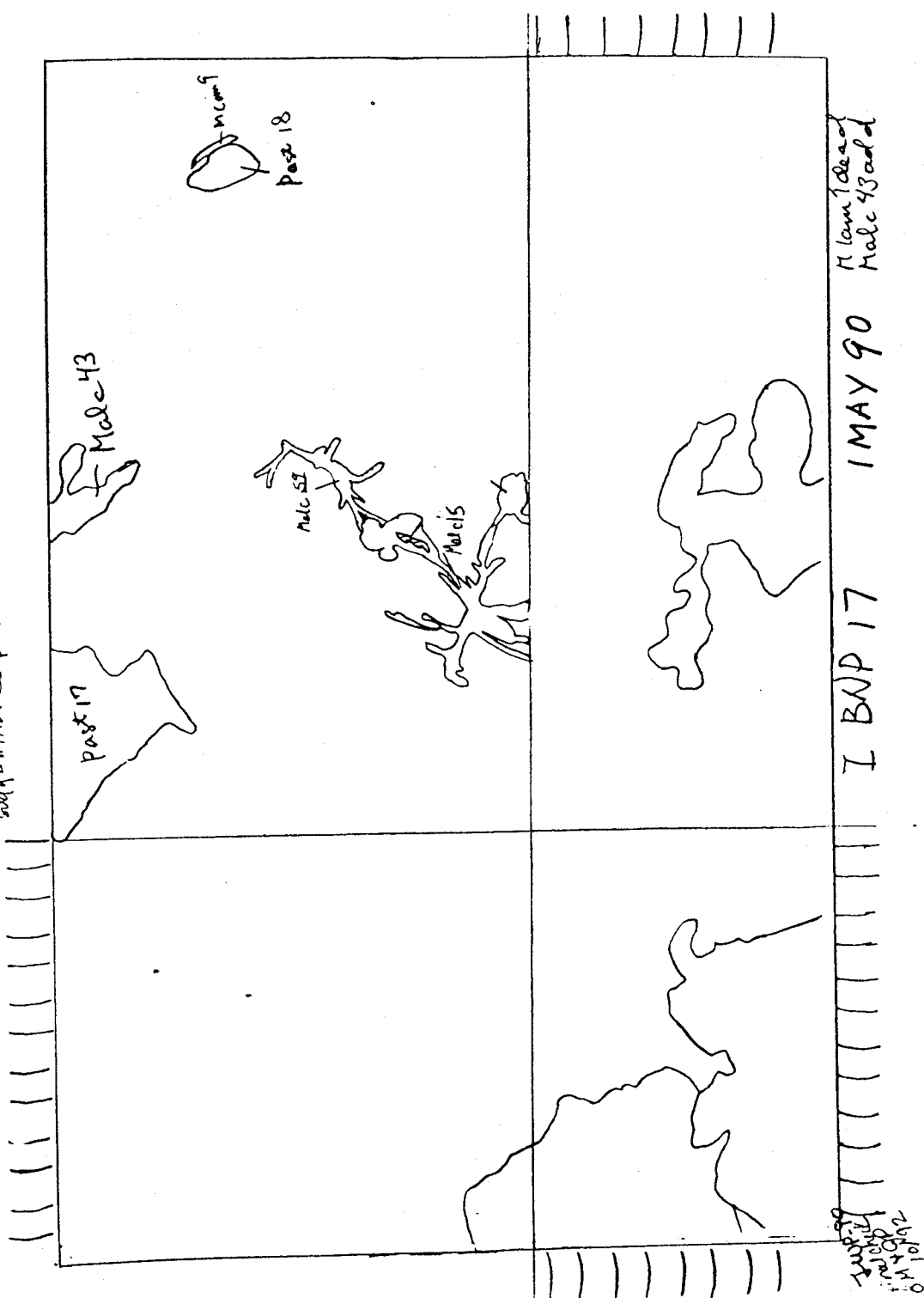
$\mu_{\text{can}} \text{ under load}$

02-100

finger 29102

wp. 12-2-12

Survey 11/12: Swamp Males add Male 59



MD 12-2-72

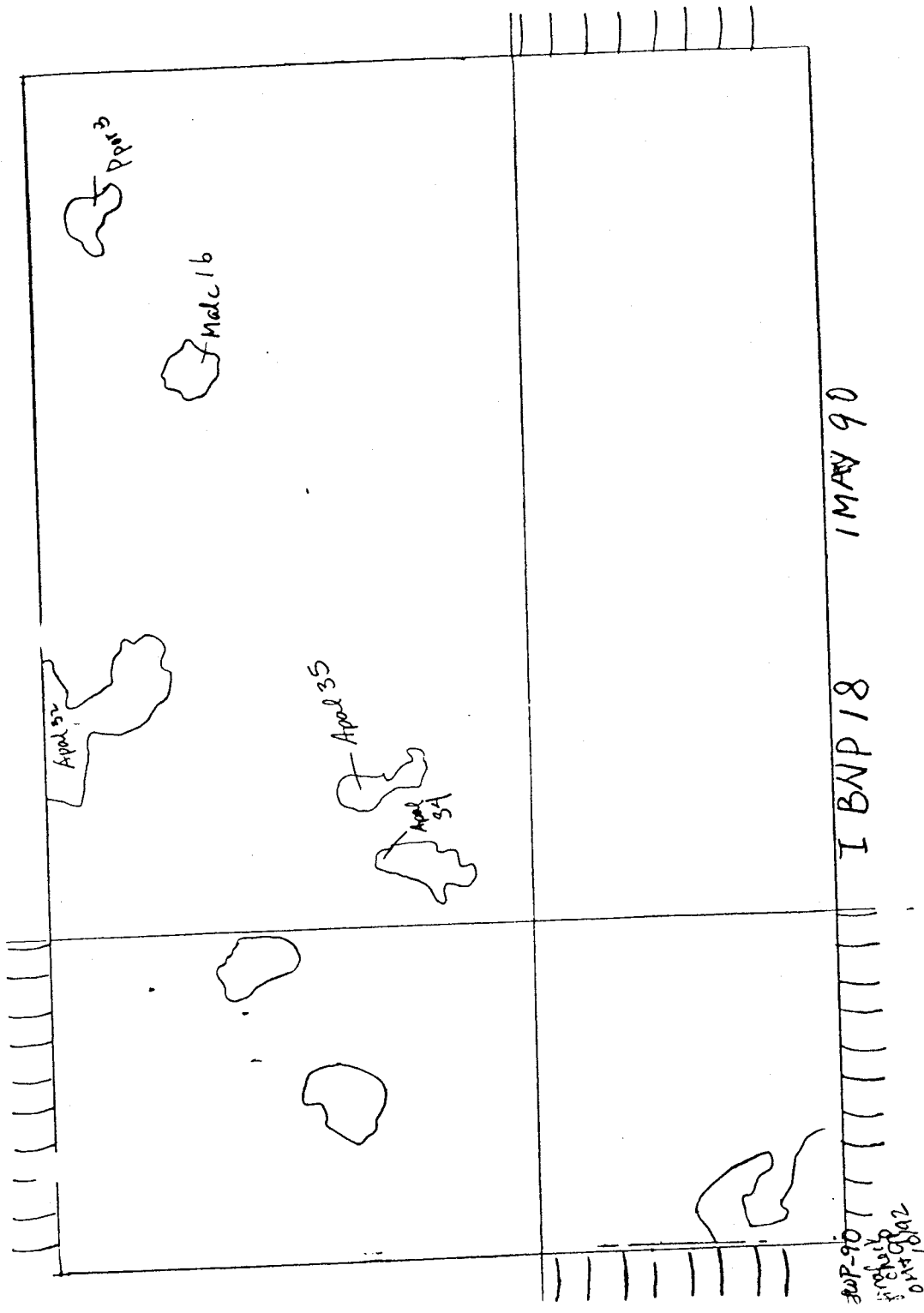
220422

Mean 6

Sup-9d (| | | |) II BNP 15 28 APR 89 Add M car-g

28 APR 89

II BNP 15



BNP-12-4-12

|||||

--	--

21 July

Post 9

|||||

II BNP 14

28 APR 89

1. Made 21 gone in 90

11

11

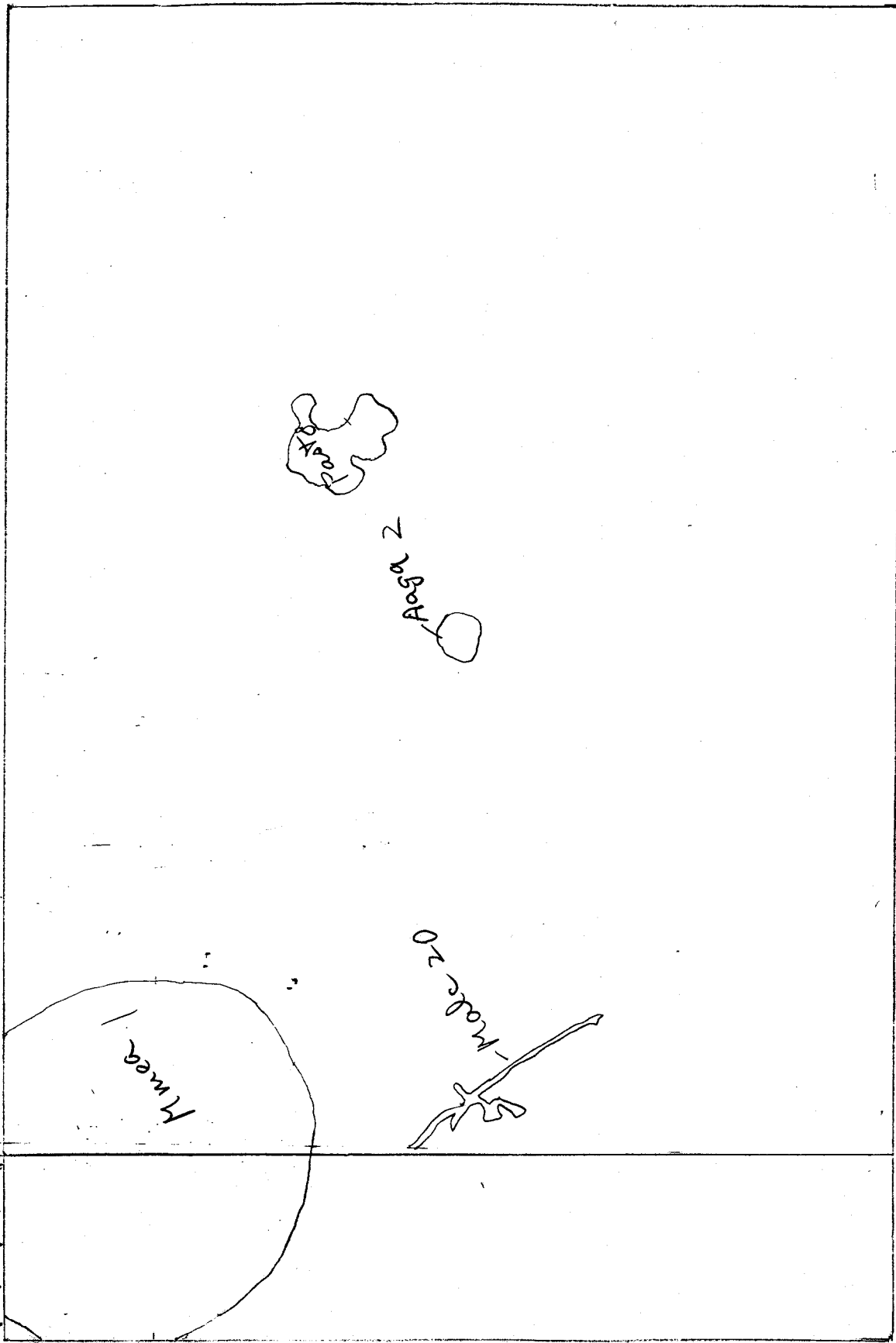
--	--

Handwritten note: HCAV 4

06-JAN-88

II BNP 13

28 APR 89



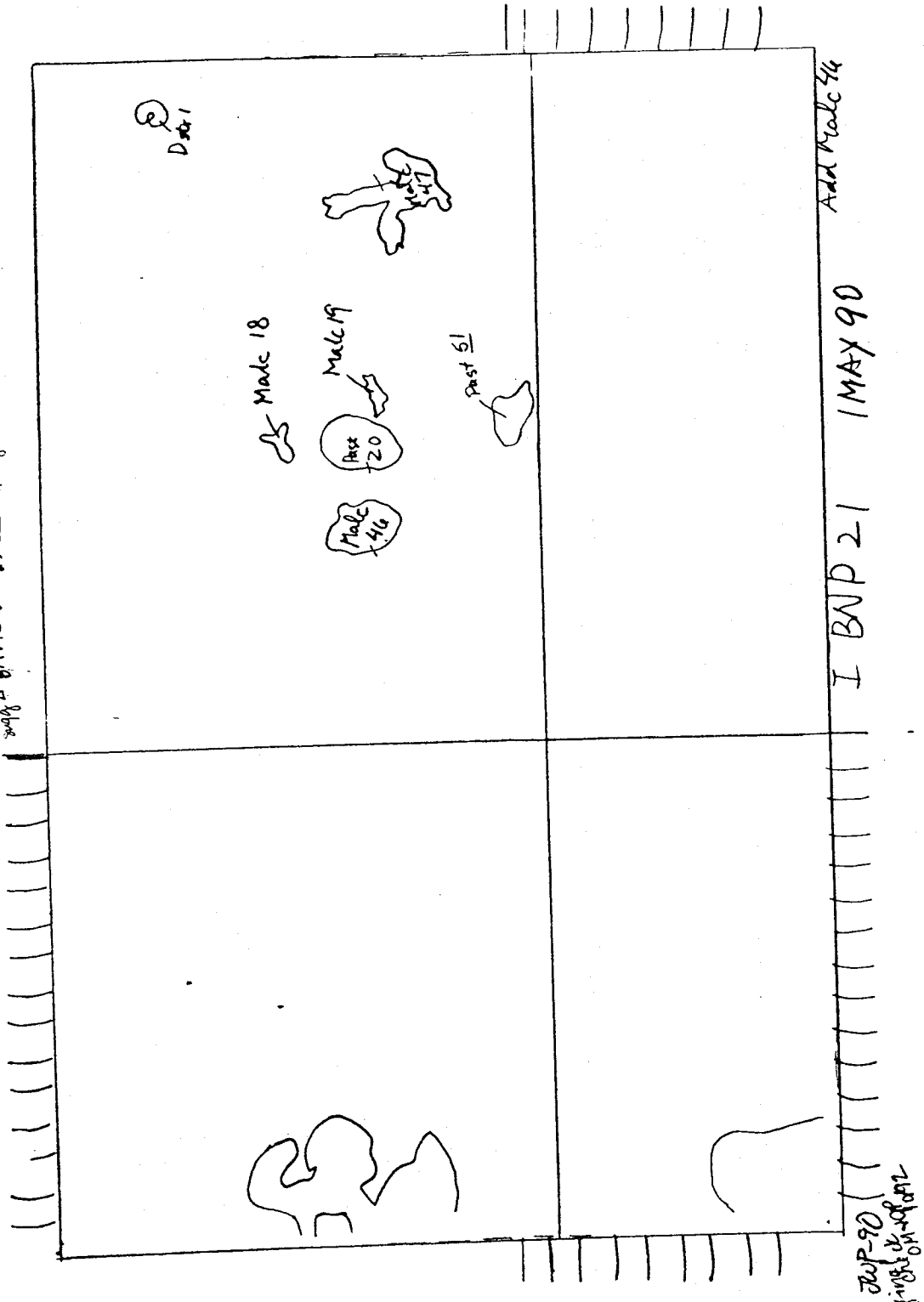
28 APR 89

II BNP 12

(((((

JUP-90

3048 Δ MV92 6 25 51 change hwy cut 11:00; re-examine Ddr 1 (Hou 18)



NP-12-4-92

1. Add: Male 50, 51, 53
 2. Male 18, gone in 90

28 APR 89

II BNP 11

FWP-90

Male 54

Male 55

Male 56

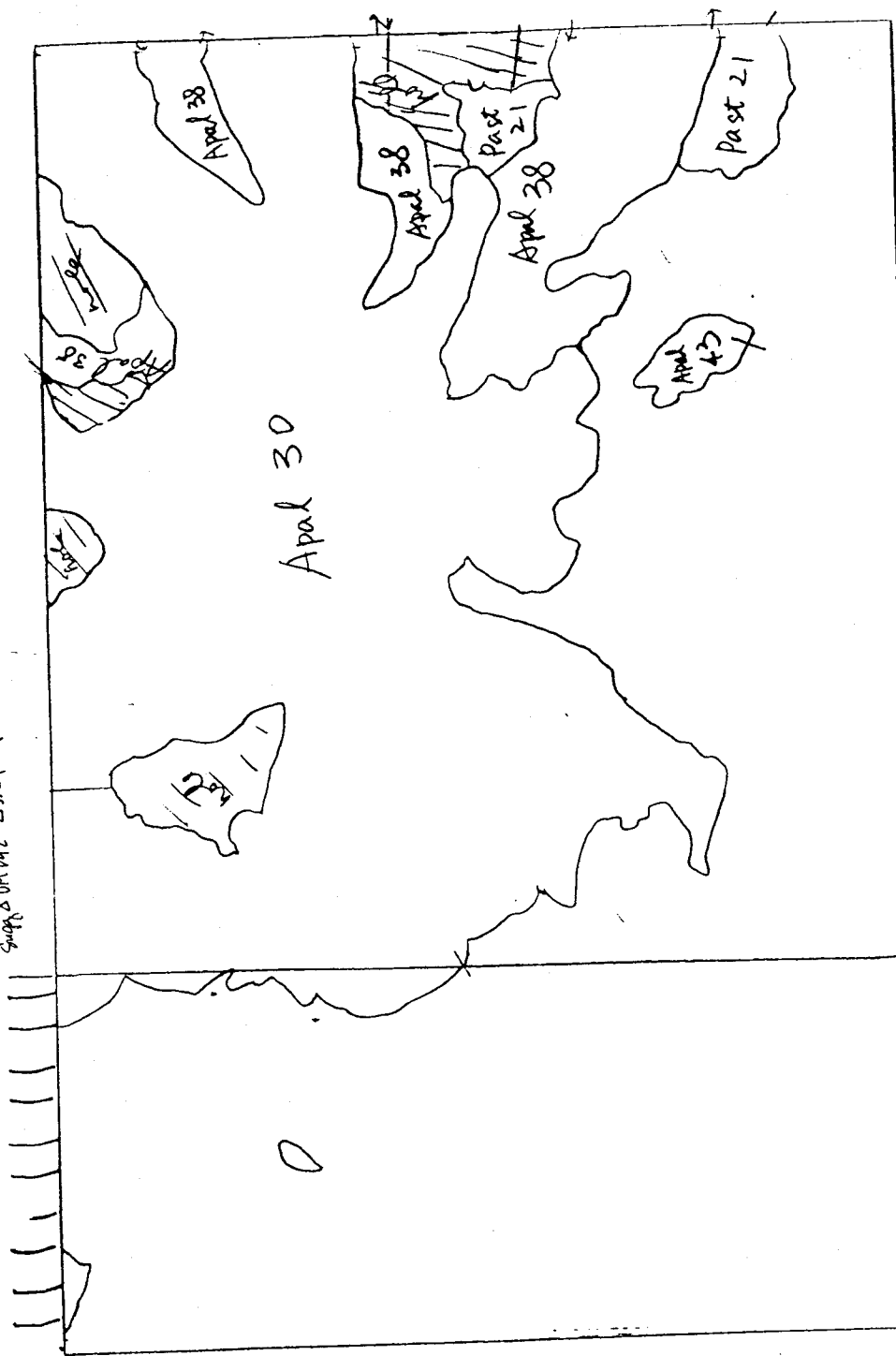
Male 19

18 DISC

off Male 50

Male 18

Supp. & DH 1/2. 25 Nov 38



I BNP 22 1 MAY 90

11/12/92
01/18/92

NP-12-4-72

Male 17

Mean 36
Male 14

Male 15
Male 16

1. Add: Male 48

89

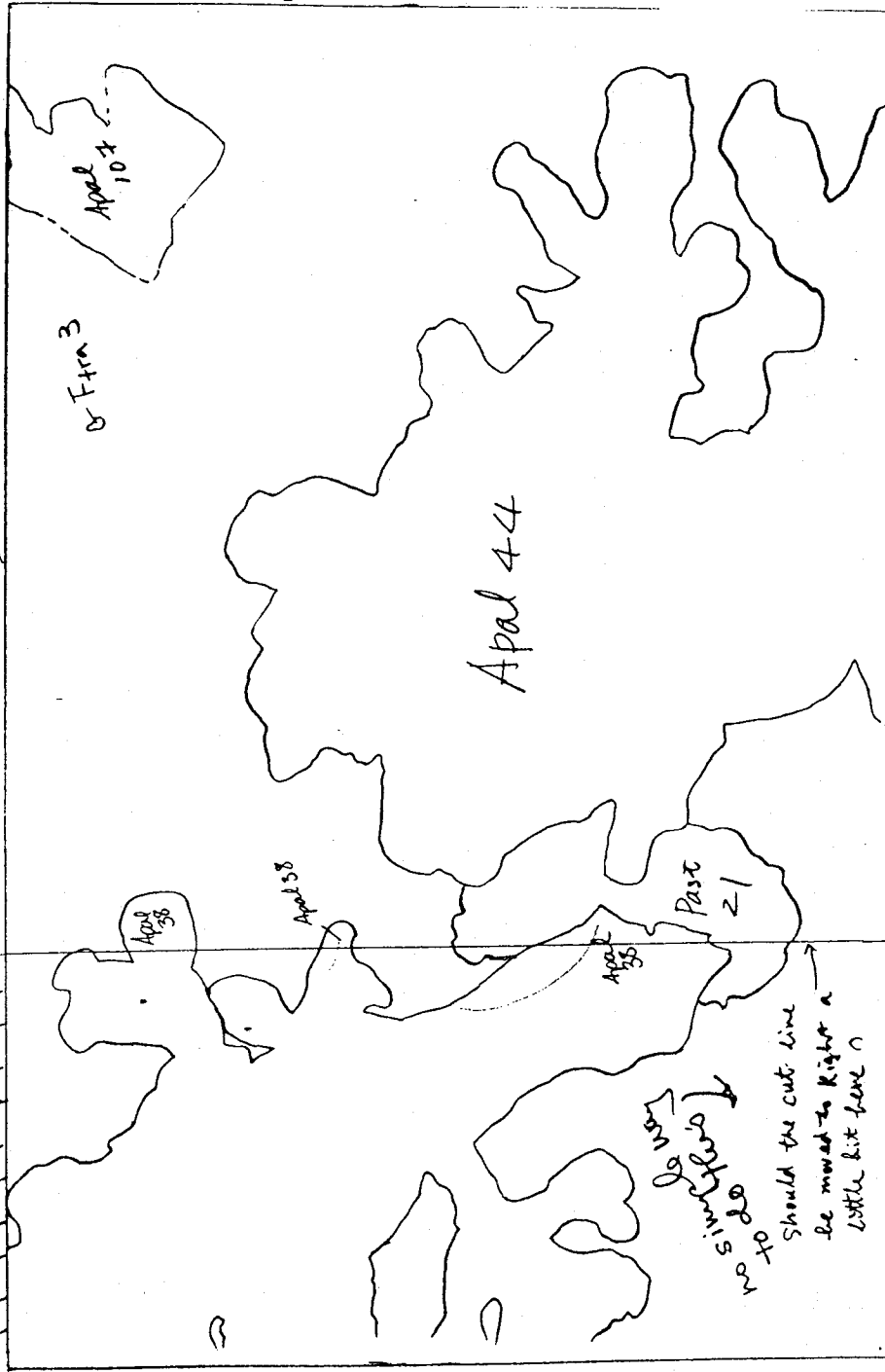
28 APR

BNP 10

II

JAP-70

May 1: Label April 36 with App 17 in upper N corner
 wrong, in for F1023, can't see in Jan
 000 April 113



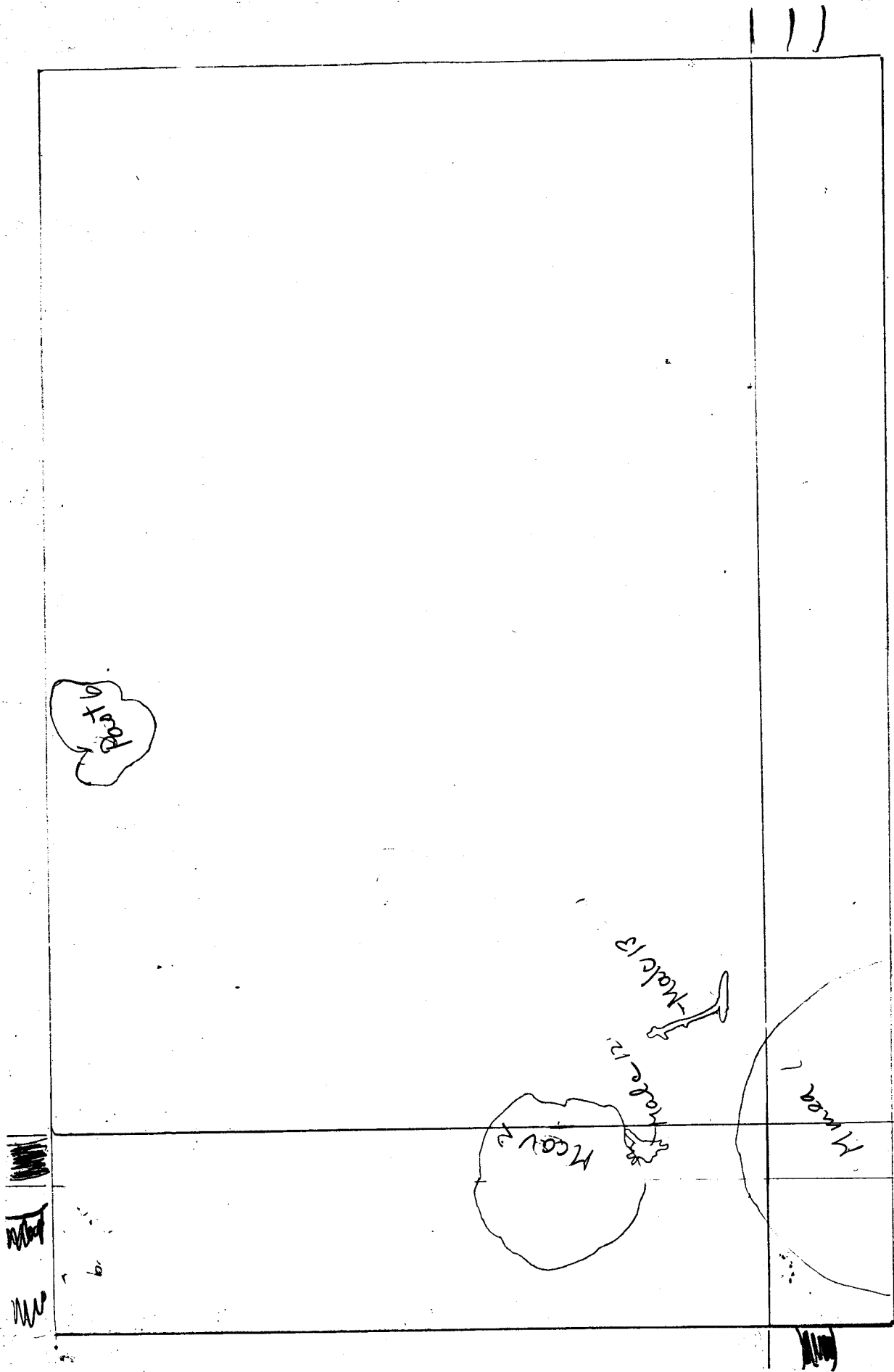
1. Male 20 gone

1 MAY 90

I BNP 23

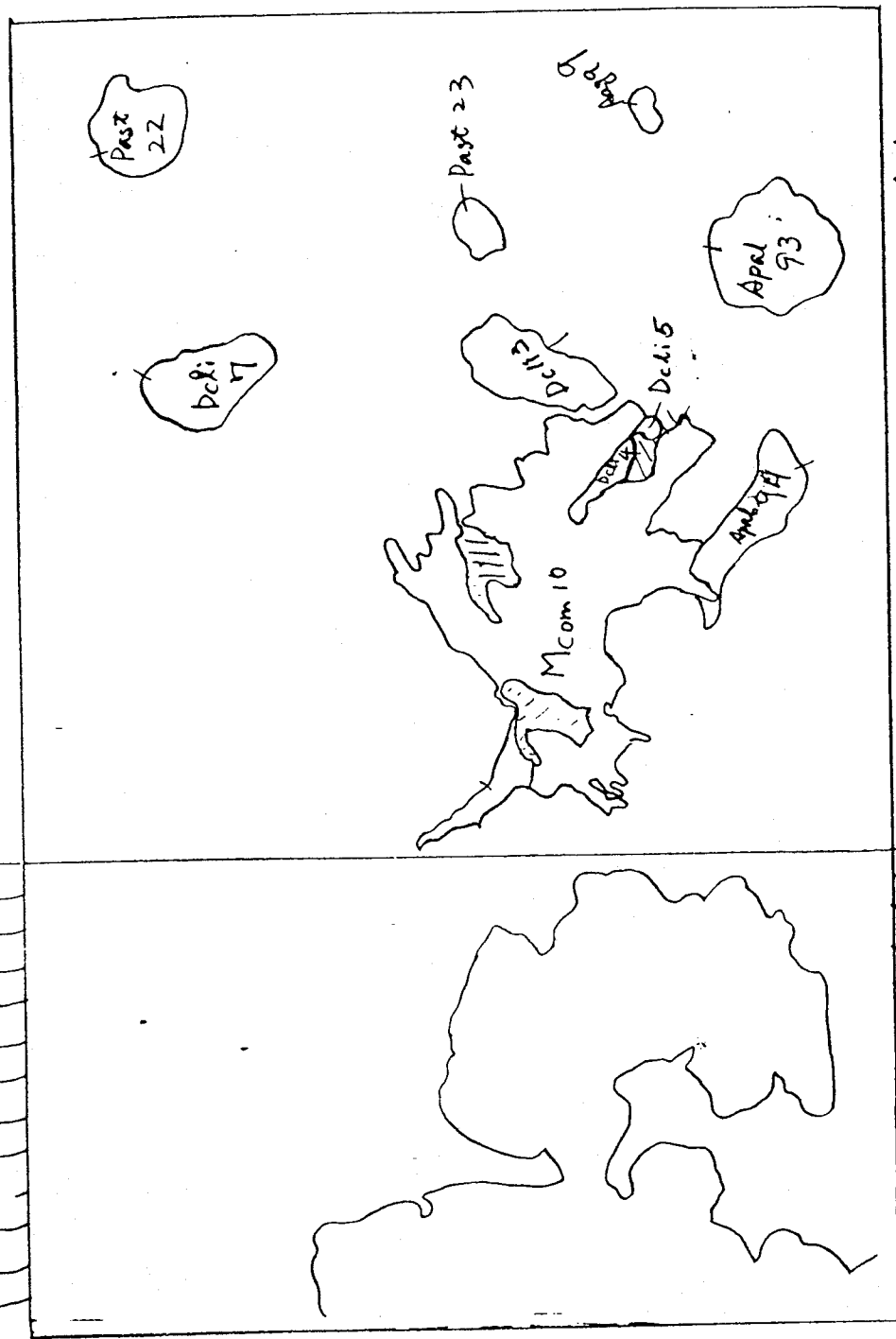
SWP 10
 11/10/92
 01/10/92

26-EC-1
 11/10/92



I BNP 9 28 APR 89

Subgraph of 1/10/92 D. 1/10/92 D. 1/10/92 D.



1. April 45 gone
2. Add: April 93
3. April 94 appears
4. April 95 reappears

I. BNP24 1 MAY 90

infect
on 10/92

28 APR 89

5/16/21

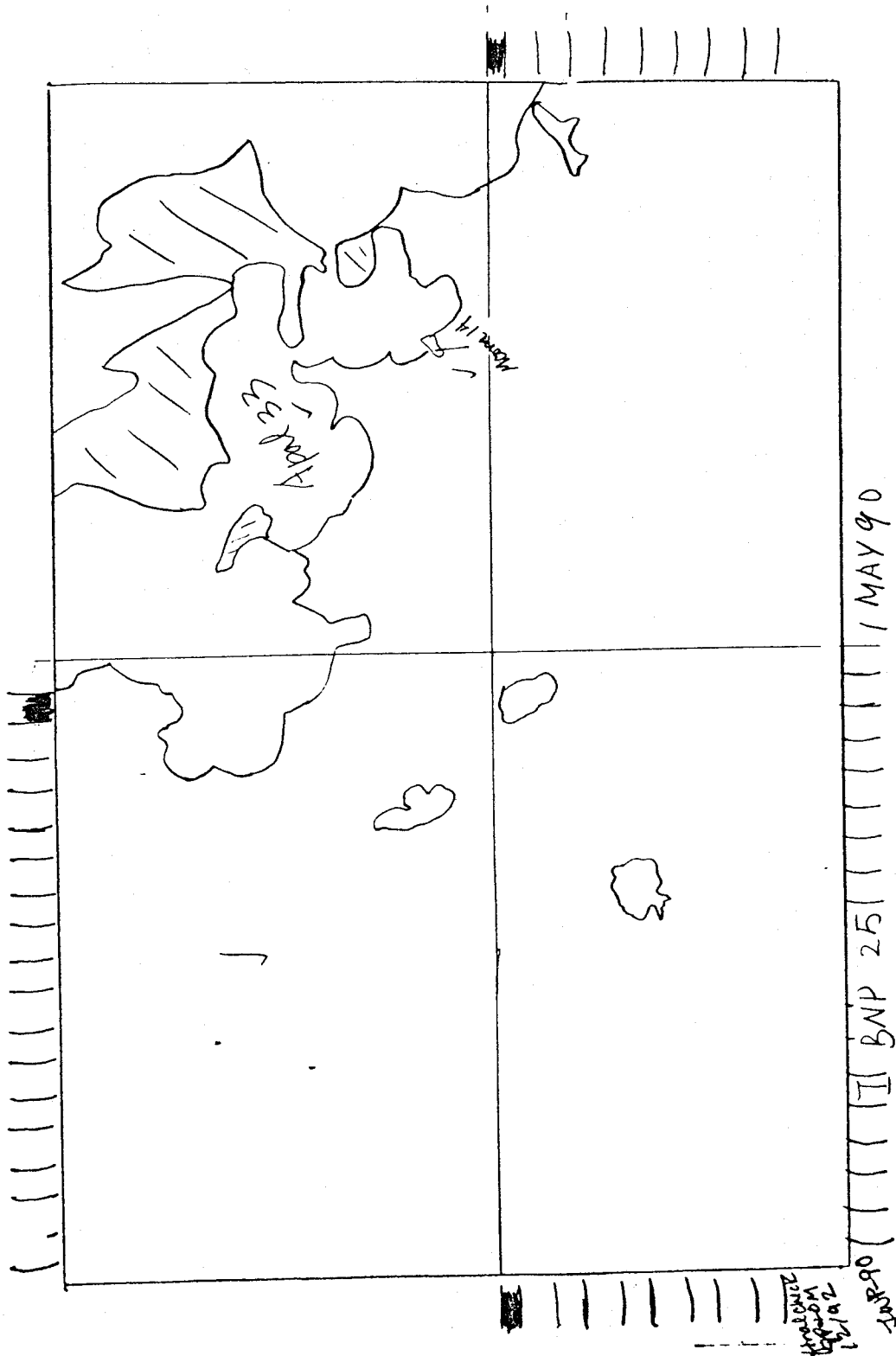
7. 

μ_{cal}

Page 12

3m2

10-901111



Agga /	1. Agga / gone in 90
---------------	-----------------------------

28 APR 89

II BNP 7

JWP-90

Swampy area on Apr. —



SWP 90
Final check
Apr 90
12/92
BNP 12611 MAY 90

Male 8

Male 9

Past 5

Male 10

Male 1

1. Male 44 and Male 85
appeared in 90.

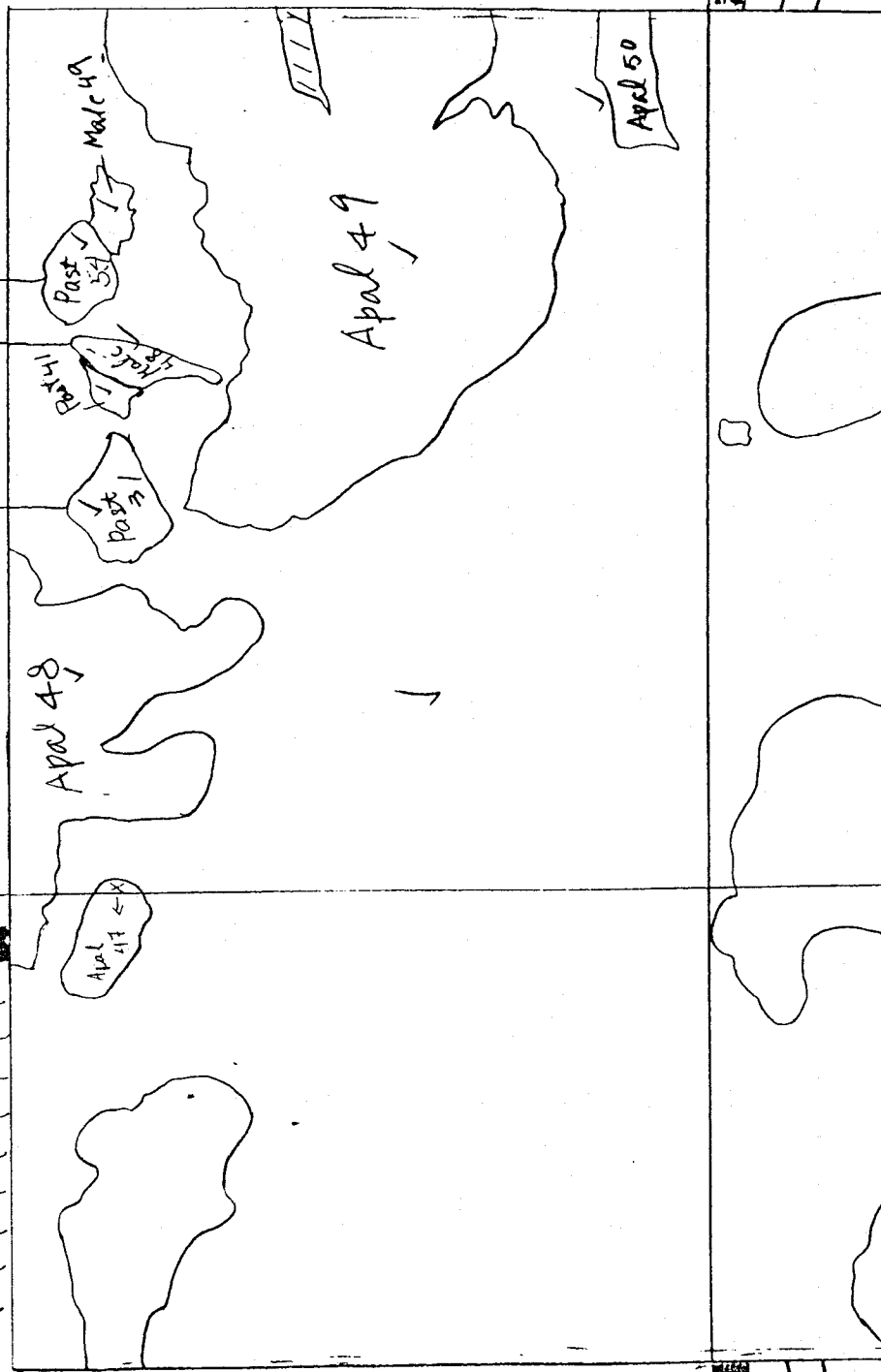
2. Male 8, Male 10 and
Past 5 gone in 90

Past 9

II BNP 6 28 APR 89

Jan 90

map of April 48 (see p. 11)
change Post 40 Post 54 (Aug. 20)



1. Add: Post C1
2. Add: Male C2
3. Add: Male C3 in 89, but not appear here

1 MAY 90

117 BNP 27 111

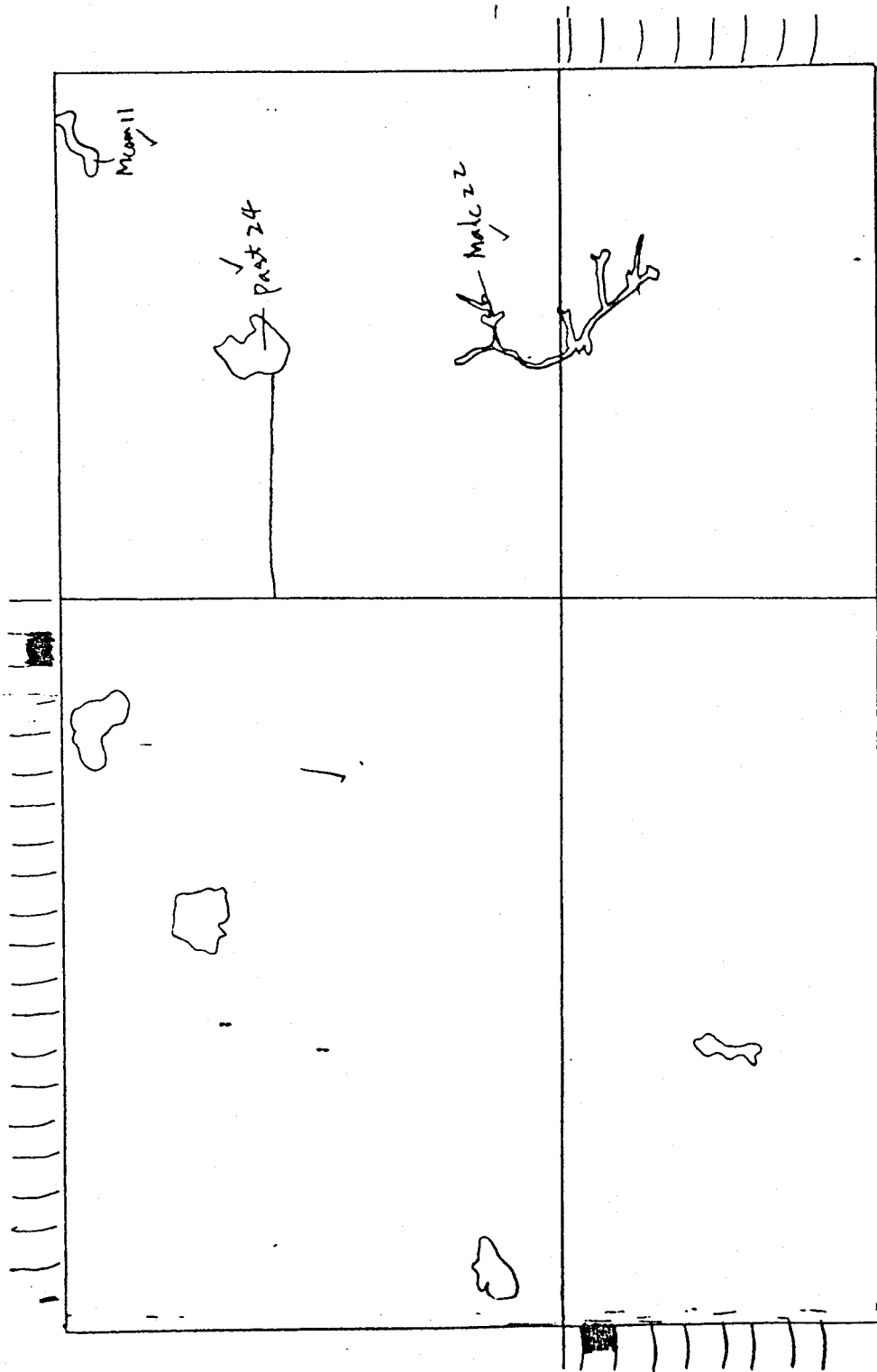
117 BNP 27 111

Male 17

Dste 2

II BNP 5 28 APR 89

JAP-88 MWT



1. Male 21 disappeared

JUN 90 I(BNPI 28) MAY 90

first check
first 90 1292

Detail

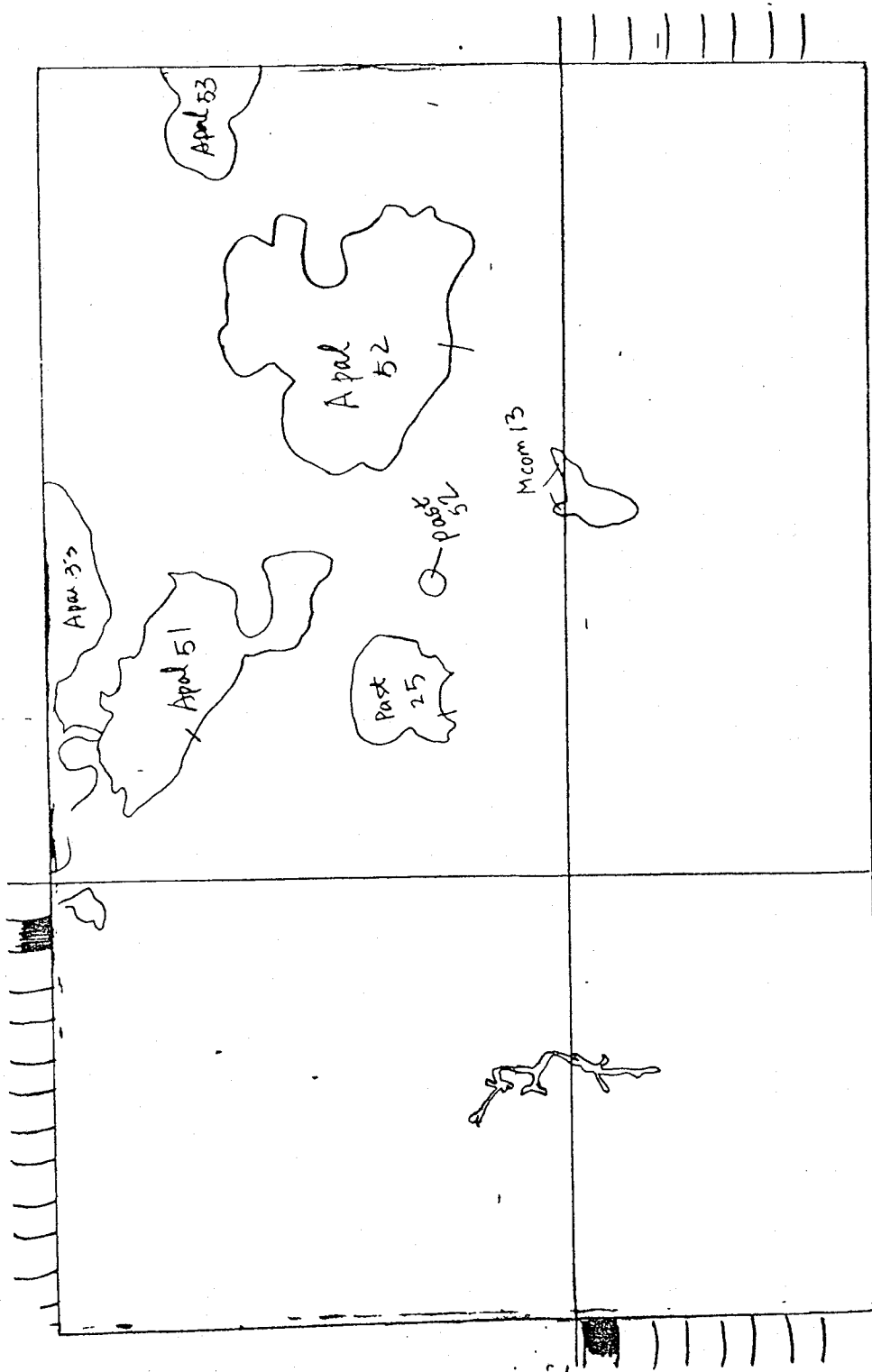


Male b

JWP-70

II BNP 4

28 APR 89



1 MAY 90

SWP 90 (I) (BNP) 2911

6012/12

MS 2.20-493

11111

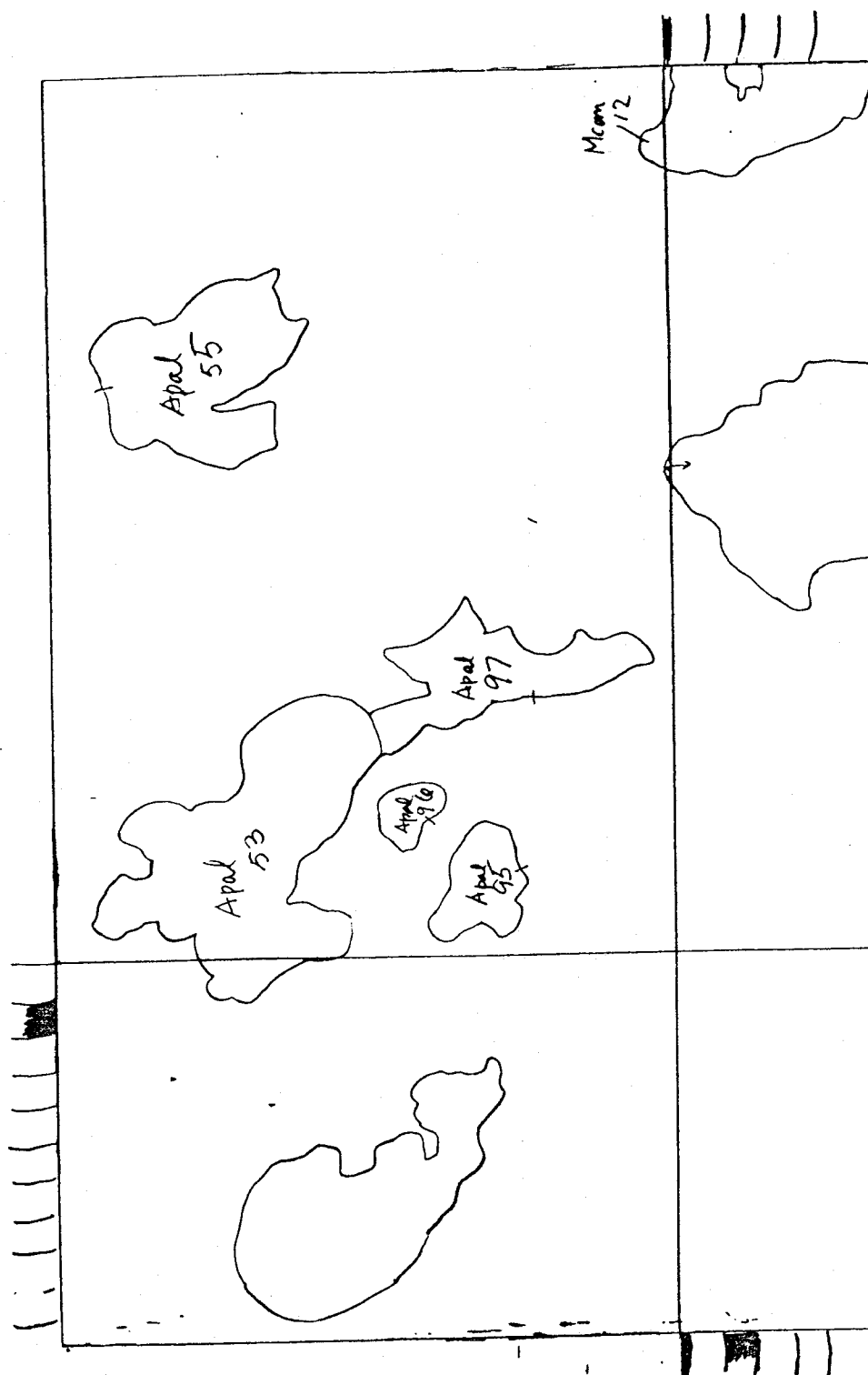
Male 5

Page 4

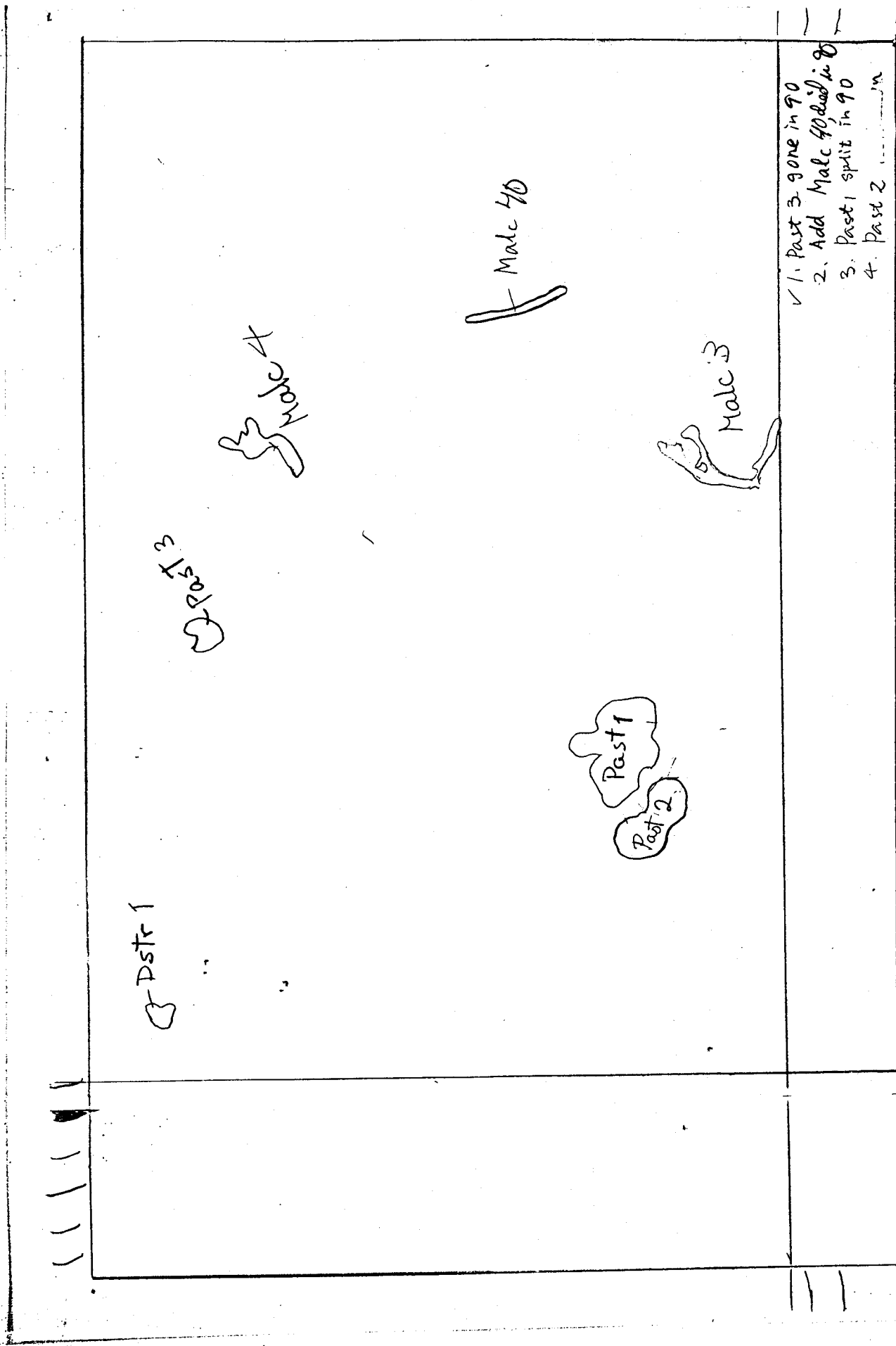
- 1. Male 5 gone in 90
- 2. Male CZ appeared in 90

JAP 90 1111

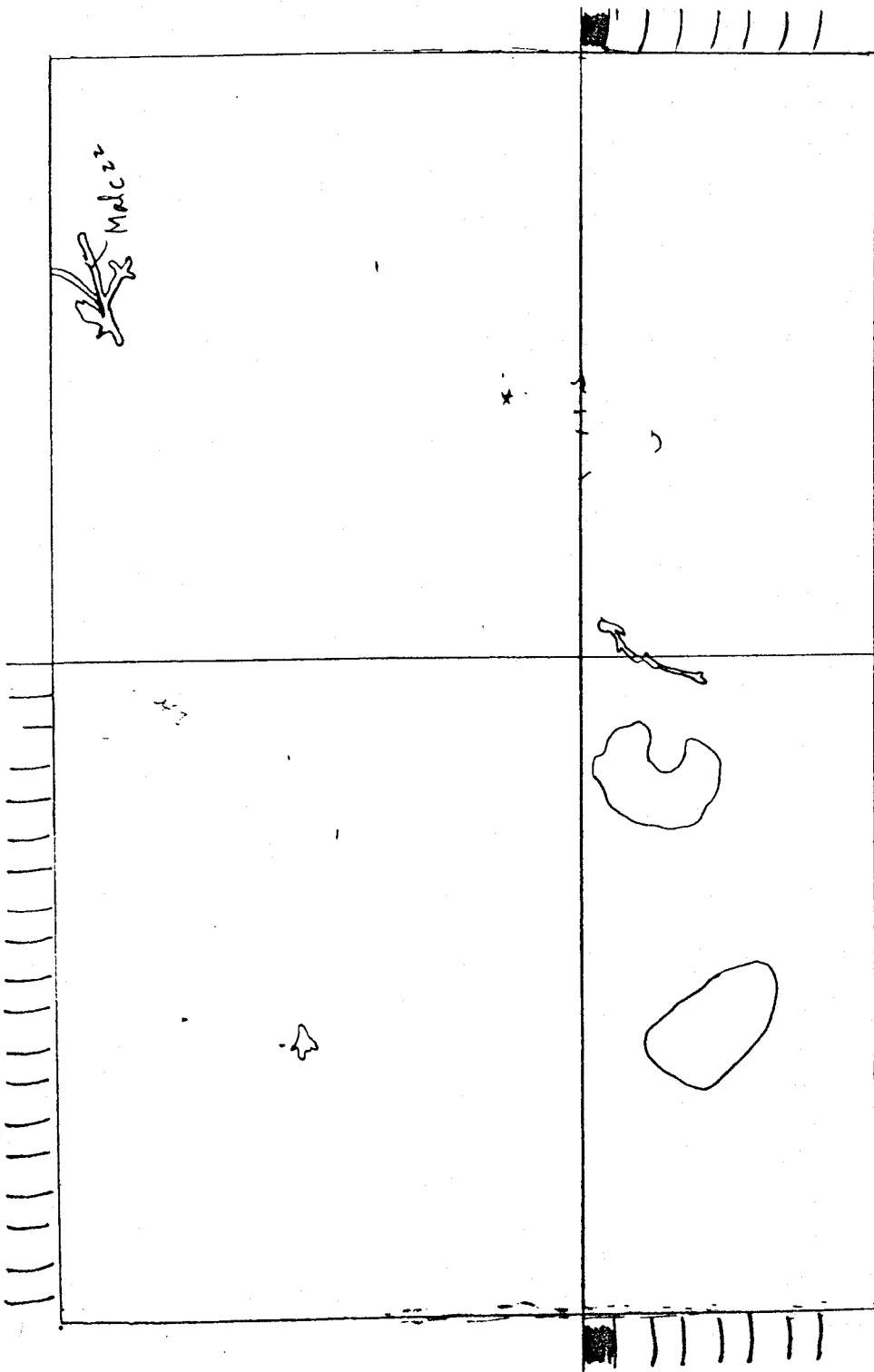
II BNP 3 28 APR 89



MI 2-26-93

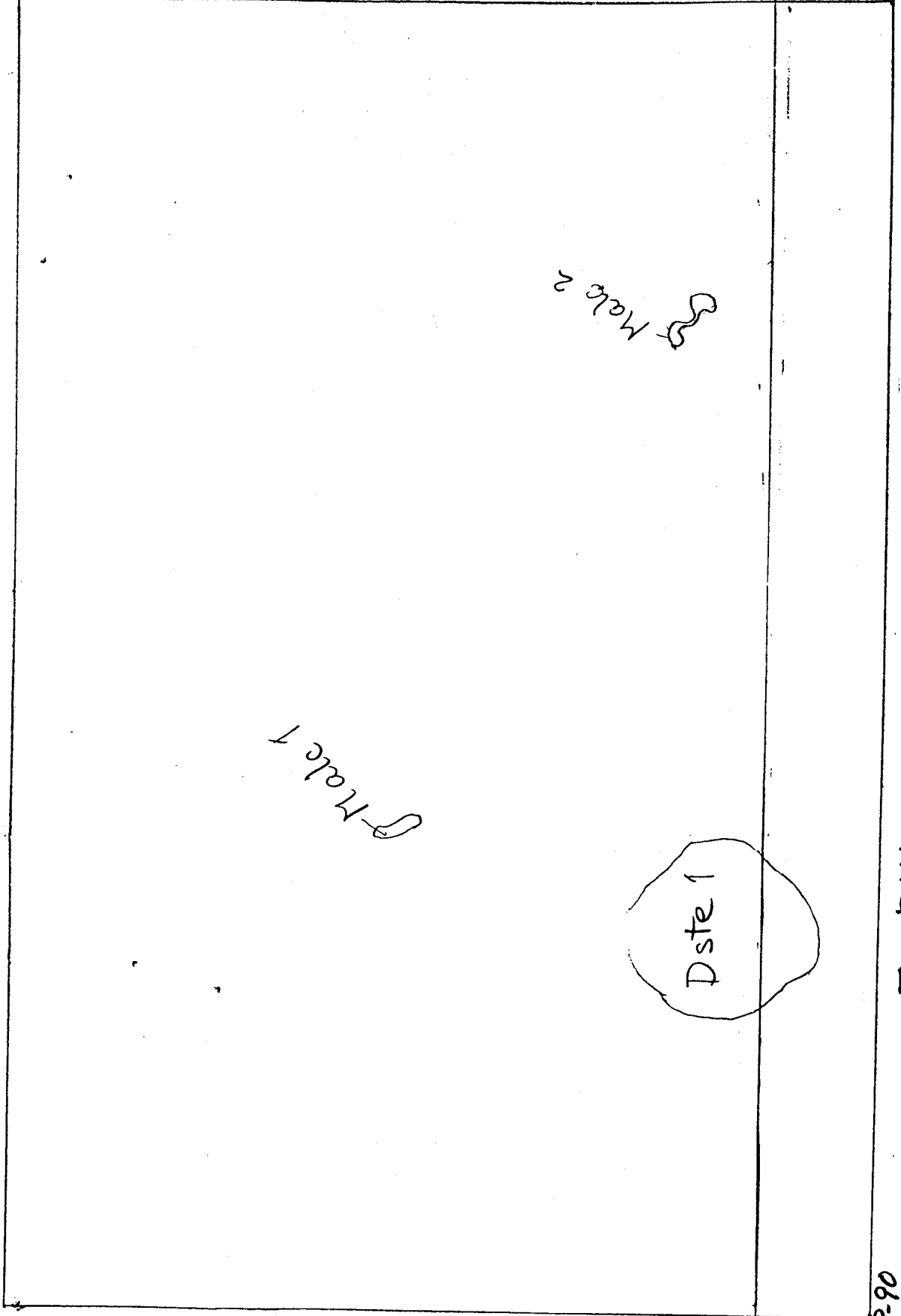


- ✓ 1. Past 3 gone in 90
- 2. Add Male 40 in 90
- 3. Past 1 split in 90
- 4. Past 2 in 90



SWP-90 I BNP 3 MAY 90
final check
00499
12/192

MP 2-25-93



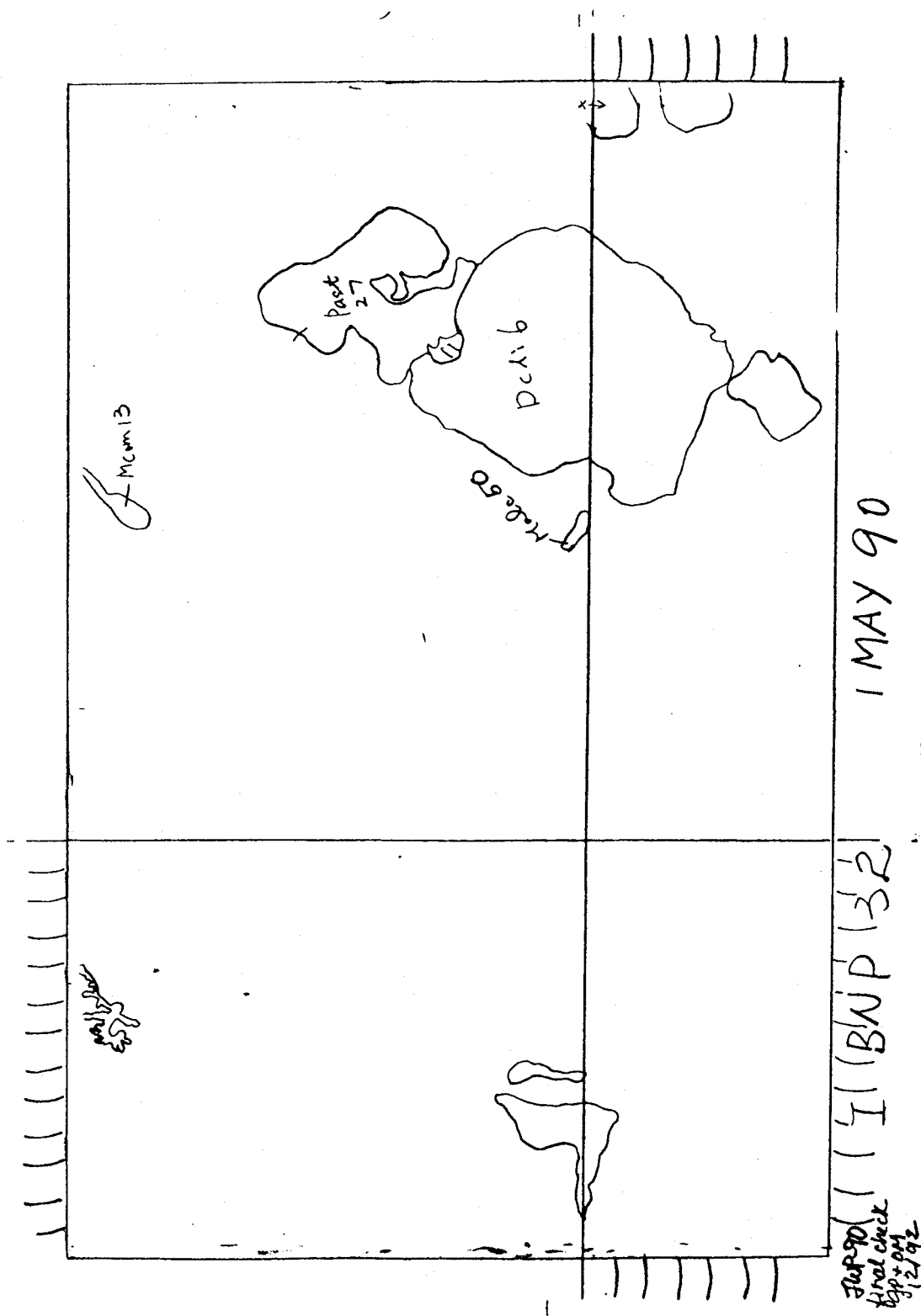
♂ Male 1

♂ Male 2

Dste 1

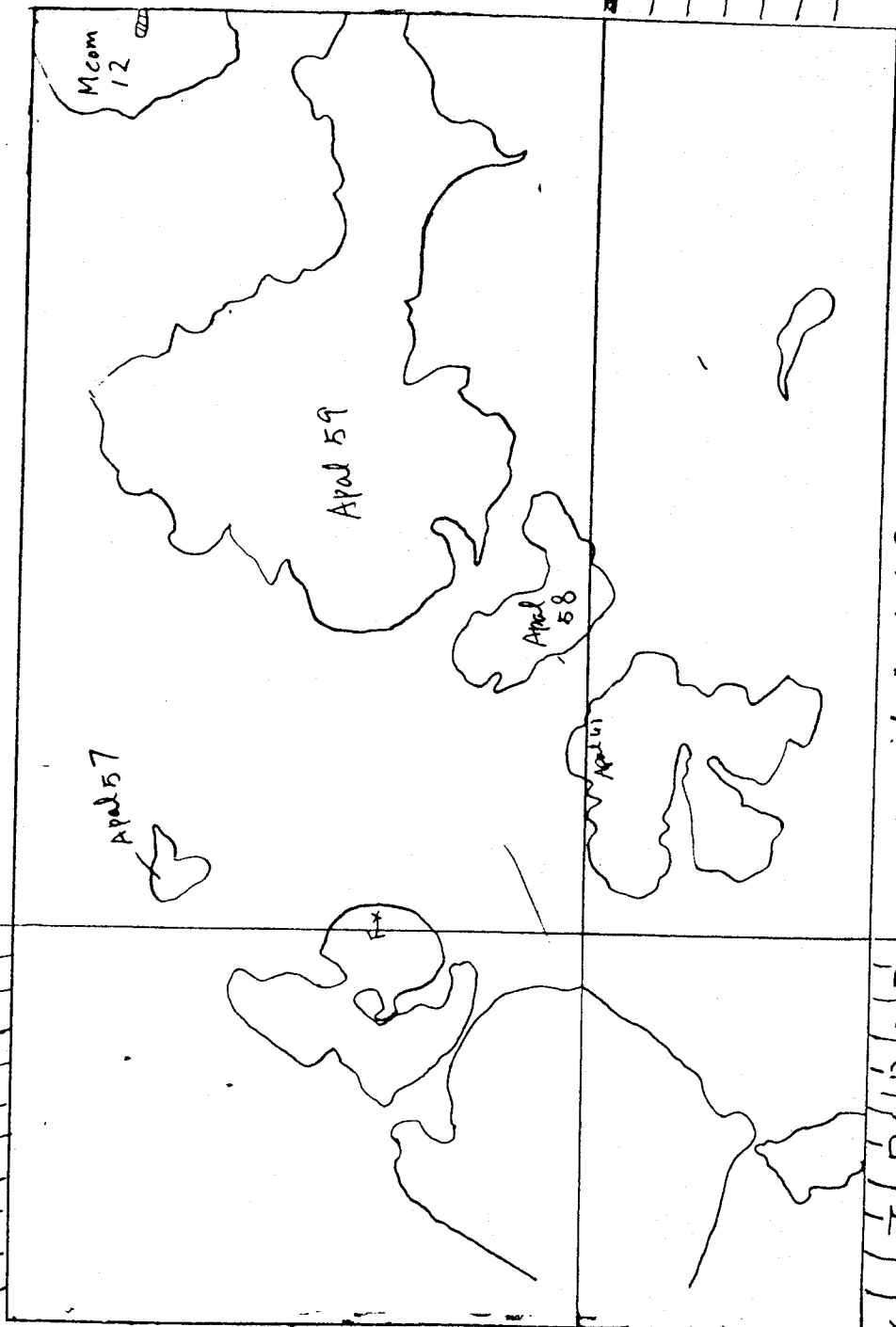
AWP-90

II BNP I 28 APR 89



31-92-2 NW

10000' 10000' April 61

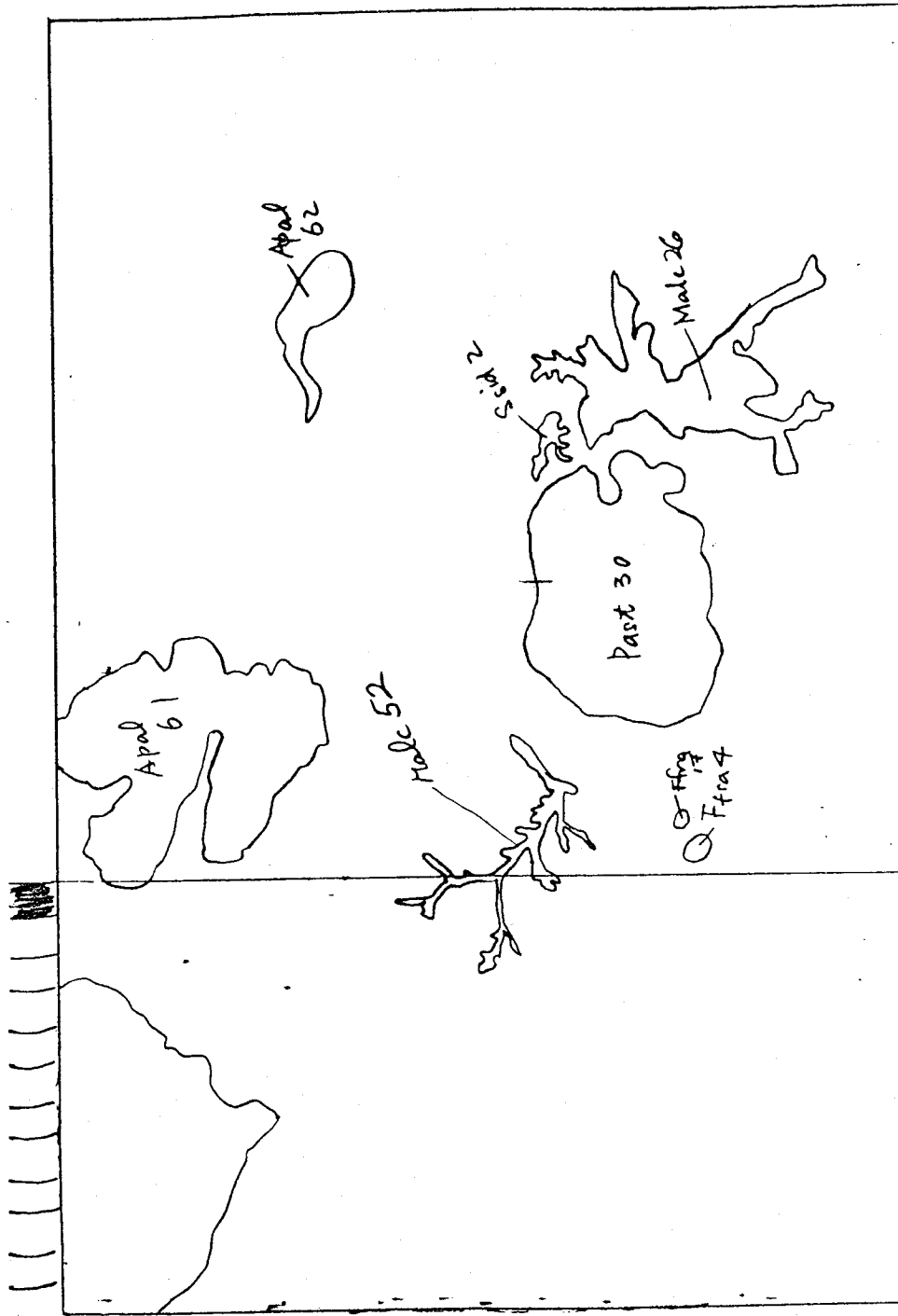


bird
black
12/192

111 BNP 1313

1 MAY 90

MAP 2-26-93



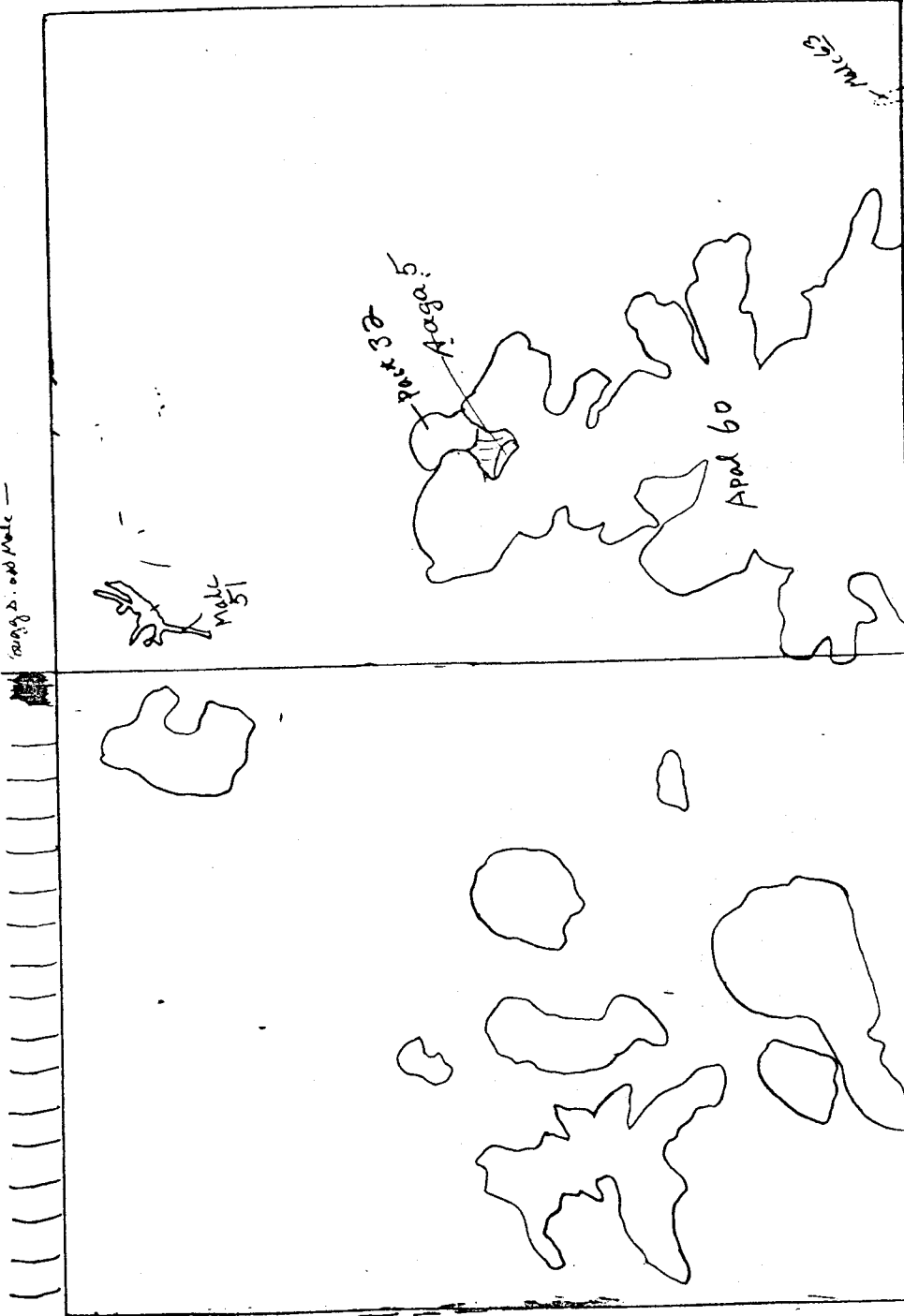
MAY 90 (Add Male 52)

Ffra 17 SR
Ffra 22 DE
Ffra 1a M/A

JUL 90 I I BNP 13/6

Final check
JWP:OM 12/92

MP 2-26-93



1. x 9 They were around in 89 n
 3 Add Males 51
 (gorgonius) flake

AUG 90 111 BNP 134 1111 MAY 90

final check
 on 12/90

