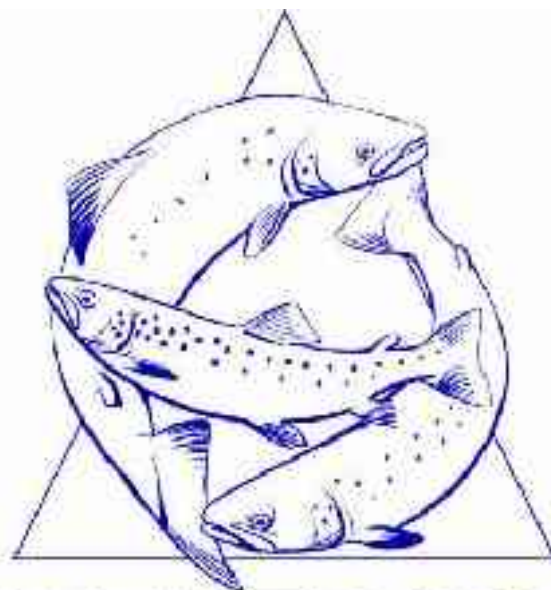


**ELECTRO-FISHING SURVEY**  
**2003 REPORT**



**DEVERON  
BOGIE  
ISLA**



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## 2003 SURVEY

| REGION | SITE  | STREAM       | GRID REF:     | WIDTH<br>METRE<br>S | LENGTH<br>METRES | COND: | SALMON<br>PER M2 | TROUT<br>PER M2 |
|--------|-------|--------------|---------------|---------------------|------------------|-------|------------------|-----------------|
| UPPER  | BW 1  | BLACKWATER   | 332600-824500 | 2.8                 | 50               | 163   | 0.28             | 0.45            |
| UPPER  | BW 9  | BLACKWATER   | 333600-828400 | 6                   | 30               | 150   | 0.32             | 0.16            |
| UPPER  | MK 13 | MARKIE       | 341500-839500 | 3.7                 | 30               | 268   | 0.65             | 0.48            |
| UPPER  | MK 9  | MARKIE       | 339900-838800 | 3                   | 18.5             |       | 0.76             | 1.58            |
| MIDDLE | Au 2  | AUCHINTOUL   | 361200-851200 | 2.3                 | 50               | 316   | 0.009            | 0.45            |
| MIDDLE | Au 3  | AUCHINTOUL   | 361200-850200 | 3.4                 | 30               | 348   | 0.06             | 0.13            |
| MIDDLE | Gd 1  | GLENDRONNACH | 362500-843000 | 1.6                 | 35               | 232   | 1.58             | 1.58            |
| MIDDLE | Gd 2  | GLENDRONNACH | 362400-844200 | 2.4                 | 27               | 260   | 0.9              | 0.42            |
| MIDDLE | F 12  | FORGUE       | 359700-843600 | 4.7                 | 46               | 200   | 1                | 0.62            |
| LOWER  | M 15  | MONQUHITTER  | 381600-852300 | 2.8                 | 45               | 298   | 0.16             | 0.85            |
| LOWER  | KE 5  | KING EDWARD  | 371600-857000 | 3.8                 | 20               | 332   | 0.91             | 0.78            |
| LOWER  | ID 8  | IDOCH WATER  | 376600-849200 | 4.2                 | 31               | 308   | 1.2              | 0.64            |
| LOWER  | T 8   | TURRIFF BURN | 372900-849400 | 6                   | 38               | 316   | 0.63             | 0.28            |
| BOGIE  | P2    | PRIEST WATER | 347600-834600 | 1.65                | 30               | 170   | 0.14             | 0.14            |
| BOGIE  | P 8   | PRIEST WATER | 349400-834400 | 2.8                 | 30               | 153   | 1.35             | 0.36            |
| BOGIE  | Lg13  | LAG          | 349000-834300 | 1.9                 | 26               | 123   | 0.82             | 0.37            |
| BOGIE  | Lg 1  | LAG          | 345200-832800 | 1.9                 | 30               | 125   | 0                | 0.58            |
| BOGIE  | Lg 10 | LAG          | 348400-834200 | 1.5                 | 30               | 121   | 1.4              | 0.62            |
| BOGIE  | K10   | KIRKNEY      | 343600-829500 | 2.7                 | 23               | 200   | 0.26             | 0.92            |
| BOGIE  | K28   | KIRKNEY      | 348900-831800 | 5.3                 | 24               | 160   | 0.61             | 0.28            |
| BOGIE  | K39   | KIRKNEY      | 351400-833600 | 4.2                 | 36               | 165   | 1.16             | 0.24            |
| BOGIE  | K23   | KIRKNEY      | 347400-830700 | 5.2                 | 31               | 169   | 0.83             | 0.77            |
| BOGIE  | Til 1 | TILLATHROWIE | 346800-834700 | 0.9                 | 30               | 151   | 0.07             | 0.68            |
| BOGIE  | Ea 0  | EALACHIE     | 343700-831300 | 1.6                 | 24               | 106   | 0                | 0.37            |
| BOGIE  | Ea 7  | EALACHIE     | 345400-830400 | 3.1                 | 25               | 124   | 0.13             | 0.25            |
| BOGIE  | Kn 1  | KEARN        | 327500-828400 | 2                   | 35               | 317   | 0.22             | 0.54            |
| BOGIE  | B 18  | BOGIE        | 352000-829500 | 5.5                 | 35               | 260   | 0.4              | 0.3             |
| BOGIE  | B 0   | BOGIE        | 348500-824500 | 3.5                 | 25               | 244   | 1                | 1.77            |
| ISLA   | CK7   | CROOKSMILL   | 340300-852500 | 3.5                 | 30               | 263   | 0.73             | 0.32            |
| ISLA   | I 36  | ISLA         | 343400-851900 | 7                   | 29               | 326   | 1.62             | 0.11            |
| ISLA   | Am 3  | AULTMORE     | 345600-856000 | 2.7                 | 30               | 150   | 0.08             | 0.29            |
| ISLA   | TOW 2 | TOWIE        | 338800-846100 | 2.5                 | 21               |       | 0                | 0.53            |
| ISLA   | TOW 1 | TOWIE        | 339000-845700 | 3.3                 | 19               | 184   | 0                | 0.67            |
| ISLA   | G 1   | GARREL       | 345300-854900 | 1.5                 | 22               | 170   | 0.45             | 0.45            |
| ISLA   | I 12  | ISLA         | 339600-845700 | 4                   | 22.5             | 345   | 0.09             | 0.62            |
| ISLA   | DV 19 | DAVIDSON     | 341500-846500 | 4                   | 40               | 255   | 0.06             | 0.69            |
| ISLA   | DV 16 | DAVIDSON     | 341800-845600 | 4.3                 | 29               | 245   | 0                | 0.19            |
| ISLA   | CK7   | CROOKSMILL   | 340300-852500 | 3.5                 | 30               | 263   | 0.73             | 0.32            |
| ISLA   | I 36  | ISLA         | 343400-851900 | 7                   | 29               | 326   | 1.62             | 0.11            |
| ISLA   | Am 3  | AULTMORE     | 345600-856000 | 2.7                 | 30               | 150   | 0.08             | 0.29            |
| ISLA   | TOW 2 | TOWIE        | 338800-846100 | 2.5                 | 21               |       | 0                | 0.53            |
| ISLA   | TOW 1 | TOWIE        | 339000-845700 | 3.3                 | 19               | 184   | 0                | 0.67            |
| ISLA   | G 1   | GARREL       | 345300-854900 | 1.5                 | 22               | 170   | 0.45             | 0.45            |
| ISLA   | I 12  | ISLA         | 339600-845700 | 4                   | 22.5             | 345   | 0.09             | 0.62            |
| ISLA   | DV 19 | DAVIDSON     | 341500-846500 | 4                   | 40               | 255   | 0.06             | 0.69            |
| ISLA   | DV 16 | DAVIDSON     | 341800-845600 | 4.3                 | 29               | 245   | 0                | 0.19            |

## **1. OBJECTIVES**

The main objectives of the 2003 survey were:

- Monitor areas above obstacle removals & current obstacles
- Monitor areas previously surveyed in 1991
- Survey burns which may be affected by Wind farm developments

## **2. SALMON DENSITIES & PRESENCE/ABSENCE**

| <u>SECTION OF RIVER</u> | <u>AVERAGE DENSITY</u> | <u>SITES</u> | <u>PRESENCE</u> | <u>ABSENCE</u> |
|-------------------------|------------------------|--------------|-----------------|----------------|
| LOWER DEVERON           | 0.73                   | 4            | 4               | 0              |
| MIDDLE DEVERON          | 0.66                   | 4            | 4               | 0              |
| UPPER DEVERON           | 0.50                   | 4            | 4               | 0              |
| ISLA                    | 0.34                   | 9            | 6               | 3              |
| BOGIE                   | 0.56                   | 15           | 13              | 2              |

## **3. TROUT DENSITIES & PRESENCE/ABSENCE**

| <u>SECTION OF RIVER</u> | <u>AVERAGE DENSITY</u> | <u>SITES</u> | <u>PRESENCE</u> | <u>ABSENCE</u> |
|-------------------------|------------------------|--------------|-----------------|----------------|
| LOWER DEVERON           | 0.64                   | 4            | 4               | 0              |
| MIDDLE DEVERON          | 0.70                   | 4            | 4               | 0              |
| UPPER DEVERON           | 0.67                   | 4            | 4               | 0              |
| ISLA                    | 0.43                   | 9            | 9               | 0              |
| BOGIE                   | 0.55                   | 15           | 15              | 0              |

The following sites showed absence of salmon:

|       |          |         |
|-------|----------|---------|
| Lg1   | Lag burn | (Bogie) |
| Ea10  | Ealachie | (Bogie) |
| Tow 1 | Towie    | (Isla)  |
| Tow 2 | Towie    | (Isla)  |

## **4. EXPLANATORY NOTES & REMARKS:**

The very dry summer and low water will have affected the juvenile survey results. With water temperatures hovering around 20° C for much of the time many of the survey sites such as the Auchintoul sites will be distorted. Some of our sites were too low and were therefore not surveyed. In contrast, the Isla I36 site had more fish than in previous surveys because of the faster, deeper water at that point whilst adjoining stretches of slow, shallow water were devoid of fish.

- Lg1 is at the top of the Lag burn which is not very suitable habitat for salmonids but is also above the modified Irish fords. Until this 2003 survey we had not found salmonids above these bridges. We also discovered fallen trees had caused an obstruction after the winter storms which would have also affected any migration during the summer months.
- We have proof that the modifications to the Irish fords on the Lag burn (Lg10 &13) have allowed upstream passage of salmon with very healthy populations of fry above.
- Ea10 is a very small tributary of the Kirkney Water within the Clashindarroch Forest. Again it is not very suitable habitat for salmonids. With such low water conditions at the time of survey the fish will have inhabited other areas.

- Tow1 is above the dam on the Towie Burn so no surprise that there were zero salmonids, but disappointed not to find salmon below the dam (Tow 2). However, the Upper Isla, being above the Strathisla distillery dam in Keith, is low in salmonid production.
  - Til 1 is in the heart of the Clashindarroch forest on the Tillathrowie burn. Surprisingly healthy numbers of salmon and trout found here.
  - Gd1 is above the Glendronnach distillery. After finding no salmon on this site in 2002 and asking the distillery to carry out some alterations to the water off take it is heartening to see salmon in that section again. These were all fry so the modifications had the desired effect in allowing free passage of spawning fish during the 2002/3 winter.
  - The Davidston burn water off-take is not allowing free movement of fish as our survey highlights with zero salmon upstream of the weir.
  - The Aultmore burn figures show cause for concern. For a burn with such reserves of gravels and a history of an abundance of spawning fish this burn should be giving readings of about 1 per sq: metre at least. Constant realignment of the burn by farmers downstream is probably having a serious affect on the spawning redds.
  - Better news on the Garrel burn which is a tributary of the Aultmore. After the installation of a fish pass on a bridge apron in 2001 we found a healthy population of salmonids above the bridge.
-

5.

**2003 SURVEY**

| SITE  | STREAM           | SALMON AGE CLASSES |       |       |    | TROUT AGE CLASSES  |       |       |       |
|-------|------------------|--------------------|-------|-------|----|--------------------|-------|-------|-------|
|       |                  | DENSITY /SQ: METRE |       |       |    | DENSITY /SQ: METRE |       |       |       |
|       |                  | 0+                 | 1+    | 2+    | 3+ | 0+                 | 1+    | 2+    | 3+    |
| BW 1  | BLACKWATER       | 0.19               | 0.09  | 0     | 0  | 0.37               | 0.06  | 0     | 0     |
| BW 9  | BLACKWATER       | 0.3                | 0.02  | 0     | 0  | 0.16               | 0     | 0     | 0     |
| MK 13 | MARKIE           | 0.46               | 0.2   | 0     | 0  | 0.06               | 0.19  | 0.21  | 0.03  |
| MK 9  | MARKIE           | 0.96               | 0.4   | 0     | 0  | 0.13               | 0.38  | 0.42  | 0     |
| Au 2  | AUCHINTOUL       | 0                  | 0.009 | 0     | 0  | 0.39               | 0.06  | 0     | 0     |
| Au 3  | AUCHINTOUL       | 0.06               | 0     | 0     | 0  | 0.01               | 0.12  | 0     | 0     |
| Gd 2  | GLENDRONNAC      | 0.74               | 0.15  | 0     | 0  | 0.17               | 0.23  | 0.015 | 0     |
| Gd 1  | GLENDRONNAC<br>H | 1.6                | 0     | 0     | 0  | 1.25               | 0.47  | 0.05  | 0     |
| F 12  | FORGUE           | 0.86               | 0.14  | 0.005 | 0  | 0.25               | 0.38  | 0.005 | 0     |
| M 15  | MONQUHITTER      | 0.14               | 0.01  | 0     | 0  | 0.52               | 0.31  | 0.01  | 0.008 |
| KE 5  | KING EDWARD      | 0.78               | 0.13  | 0     | 0  | 0.56               | 0.17  | 0.01  | 0     |
| ID 8  | IDOCH WATER      | 1.1                | 0.08  | 0.007 | 0  | 0.43               | 0.22  | 0     | 0     |
| T 8   | TURRIFF BURN     | 0.5                | 0.13  | 0     | 0  | 0.013              | 0.013 | 0.009 | 0     |
| P2    | PRIEST WATER     | 0.14               | 0     | 0     | 0  | 0.1                | 0.02  | 0     | 0     |
| P 8   | PRIEST WATER     | 1.19               | 0.16  | 0.01  | 0  | 0.16               | 0.18  | 0.01  | 0     |
| Lg13  | LAG              | 0.73               | 0.08  | 0     | 0  | 0.27               | 0.1   | 0     | 0     |
| Lg 1  | LAG              | 0                  | 0     | 0     | 0  | 0.42               | 0.09  | 0.07  | 0     |
| Lg 10 | LAG              | 1.4                | 0     | 0     | 0  | 0.55               | 0.07  | 0     | 0     |
| K10   | KIRKNEY          | 0.3                | 0     | 0     | 0  | 0.74               | 0.18  | 0     | 0     |
| K28   | KIRKNEY          | 0.41               | 0.19  | 0.02  | 0  | 0.1                | 0.14  | 0.04  | 0     |
| K39   | KIRKNEY          | 0.9                | 0.22  | 0     | 0  | 0.09               | 0.1   | 0.01  | 0.006 |
| K23   | KIRKNEY          | 0.6                | 0.17  | 0.01  | 0  | 0.62               | 0.12  | 0.01  | 0     |
| Til 1 | TILLATHROWIE     | 0.7                | 0     | 0     | 0  | 0.36               | 0.32  | 0     | 0     |
| Ea 0  | EALACHIE         | 0                  | 0     | 0     | 0  | 0.34               | 0.02  | 0     | 0     |
| Ea 7  | EALACHIE         | 0.13               | 0     | 0     | 0  | 0.24               | 0.01  | 0     | 0     |
| Kn 1  | KEARN            | 0.22               | 0     | 0     | 0  | 0.51               | 0.03  | 0     | 0     |
| B 18  | BOGIE            | 0.28               | 0.12  | 0.005 | 0  | 0.2                | 0.09  | 0.01  | 0.005 |
| B 0   | BOGIE            | 0.84               | 0.15  | 0     | 0  | 1.42               | 0.3   | 0     | 0     |
| CK7   | CROOKSMILL       | 0.72               | 0.009 | 0     | 0  | 0.28               | 0.03  | 0     | 0     |
| I 36  | ISLA             | 1.29               | 0.33  | 0     | 0  | 0.03               | 0.08  | 0.005 | 0     |
| Am 3  | AULTMORE         | 0.03               | 0.05  | 0     | 0  | 0.26               | 0.03  | 0     | 0     |
| TOW 2 | TOWIE            | 0                  | 0     | 0     | 0  | 0.4                | 0.13  | 0     | 0     |
| TOW 1 | TOWIE            | 0                  | 0     | 0     | 0  | 0.4                | 0.16  | 0.03  | 0     |
| G 1   | GARREL           | 0.42               | 0.03  | 0     | 0  | 0.42               | 0.03  | 0     | 0     |
| I 12  | ISLA             | 0.03               | 0.06  | 0     | 0  | 0.26               | 0.36  | 0     | 0     |
| DV 19 | DAVIDSON         | 0.03               | 0.03  | 0     | 0  | 0.67               | 0.02  | 0     | 0     |
| DV 16 | DAVIDSON         | 0                  | 0     | 0     | 0  | 0.11               | 0.02  | 0.05  | 0.02  |

## NOTES:

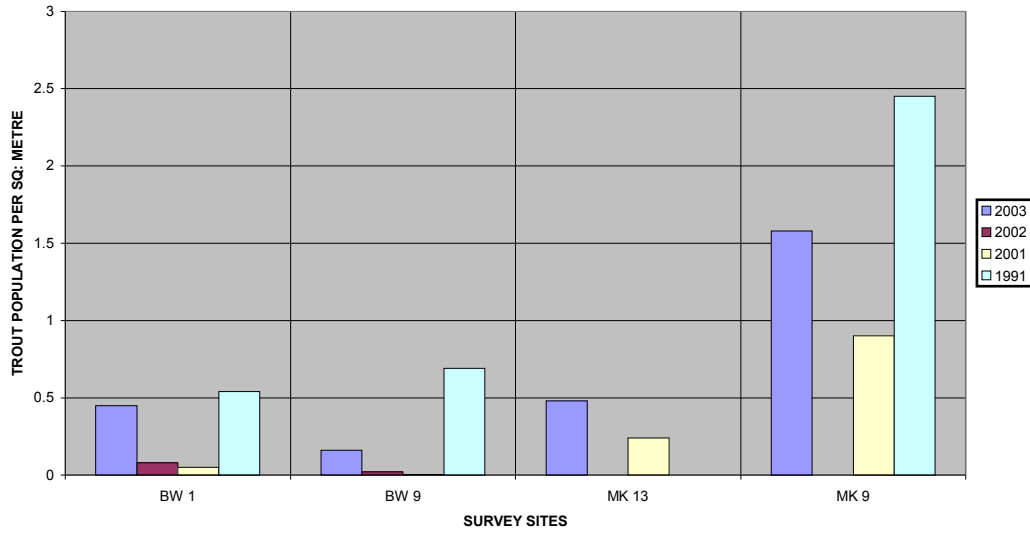
- The table above shows up the high percentage of sites with zero stock of 2+ and 3+ age classes of juvenile salmon whilst these ages of trout are not high either.
- The low water levels and high temperatures will have distorted the results this year. Our survey sites are more suited to monitor young fish and the conditions will have forced the older, larger fish either to deeper pools or even further afield to the main tributaries or main stem in order to find more oxygen and lower temperatures.

## 6. COMPARATIVE RESULTS 1991 - 2003

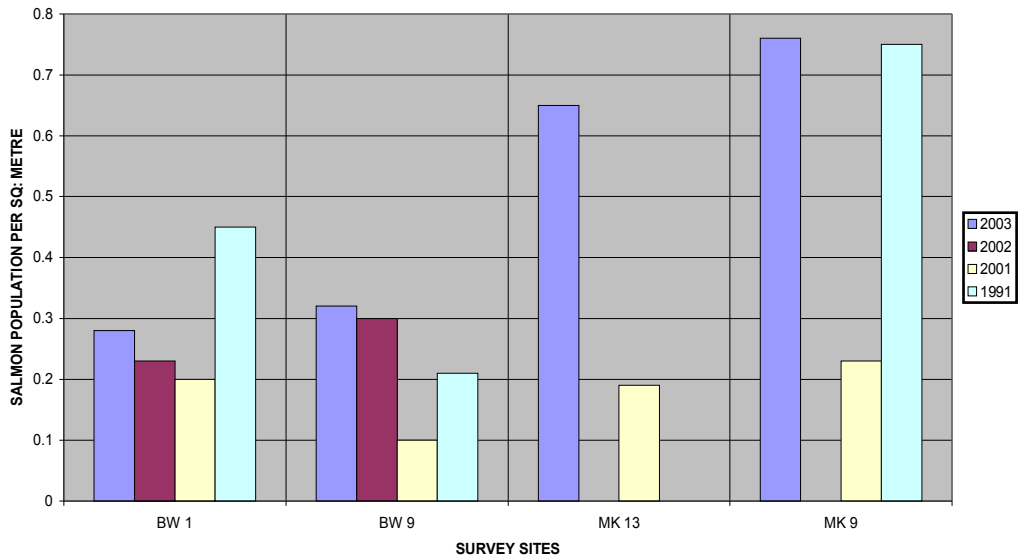
| REGION | SITE  | STREAM       | 2003   | 2002 | 2001   | 1991 | 2003  | 2002 | 2001   | 1991 |
|--------|-------|--------------|--------|------|--------|------|-------|------|--------|------|
|        |       |              | SALMON |      | PER M2 |      | TROUT |      | PER M2 |      |
| UPPER  | BW 1  | BLACKWATER   | 0.28   | 0.23 | 0.2    | 0.45 | 0.45  | 0.08 | 0.05   | 0.54 |
| UPPER  | BW 9  | BLACKWATER   | 0.32   | 0.3  | 0.1    | 0.21 | 0.16  | 0.02 | 0.004  | 0.69 |
| UPPER  | MK 13 | MARKIE       | 0.65   |      | 0.19   |      | 0.48  |      | 0.24   |      |
| UPPER  | MK 9  | MARKIE       | 0.76   |      | 0.23   | 0.75 | 1.58  |      | 0.9    | 2.45 |
| MIDDLE | Au 2  | AUCHINTOUL   | 0.009  | 0.13 | 0.92   | 0    | 0.45  | 0.26 | 0.1    |      |
| MIDDLE | Au 3  | AUCHINTOUL   | 0.06   | 0.16 |        |      | 0.13  | 0.23 |        |      |
| MIDDLE | Gd 1  | GLENDRONNACH | 1.58   | 0    | 0.3    | 0    | 1.58  | 1.62 | 2.07   | 2.04 |
| LOWER  | M 15  | MONQUHITTER  | 0.16   | 0.07 | 0.16   |      | 0.85  | 1.1  | 1.05   |      |
| LOWER  | T 8   | TURRIFF BURN | 0.63   | 0.64 | 0.83   |      | 0.28  | 0.23 | 0.18   |      |
| BOGIE  | P 8   | PRIEST WATER | 1.35   |      | 1.07   |      | 0.36  |      | 0.81   |      |
| BOGIE  | Lg13  | LAG          | 0.82   | 0    |        |      | 0.37  | 1.08 |        |      |
| BOGIE  | Lg 10 | LAG          | 1.4    | 0    | 0      |      | 0.62  | 0.44 | 1.36   |      |
| BOGIE  | K10   | KIRKNEY      | 0.26   | 0    |        |      | 0.92  | 0.5  |        |      |
| BOGIE  | K28   | KIRKNEY      | 0.61   | 0.64 |        |      | 0.28  | 0.41 |        |      |
| BOGIE  | K39   | KIRKNEY      | 1.16   | 0.8  |        |      | 0.24  | 0.33 |        |      |
| BOGIE  | B 18  | BOGIE        | 0.4    |      | 0.18   | 0.08 | 0.3   |      | 0.15   | 1.69 |
| ISLA   | CK7   | CROOKSMILL   | 0.73   | 0.24 | 0.17   |      | 0.32  | 1.13 | 0.72   |      |
| ISLA   | I 36  | ISLA         | 1.62   |      |        | 0.75 | 0.11  |      |        | 0.17 |
| ISLA   | Am 3  | AULTMORE     | 0.08   |      | 0      | 0.09 | 0.29  |      | 0.53   | 0.14 |
| ISLA   | DV 19 | DAVIDSON     | 0.06   |      | 0      |      | 0.69  |      | 0.03   |      |
| ISLA   | DV 16 | DAVIDSON     | 0      |      | 0      | 0    | 0.19  |      | 0.08   | 0.8  |

## 8. UPPER DEVERON SITES

2003 COMPARISON WITH PREVIOUS YEARS UPPER DEVERON TROUT

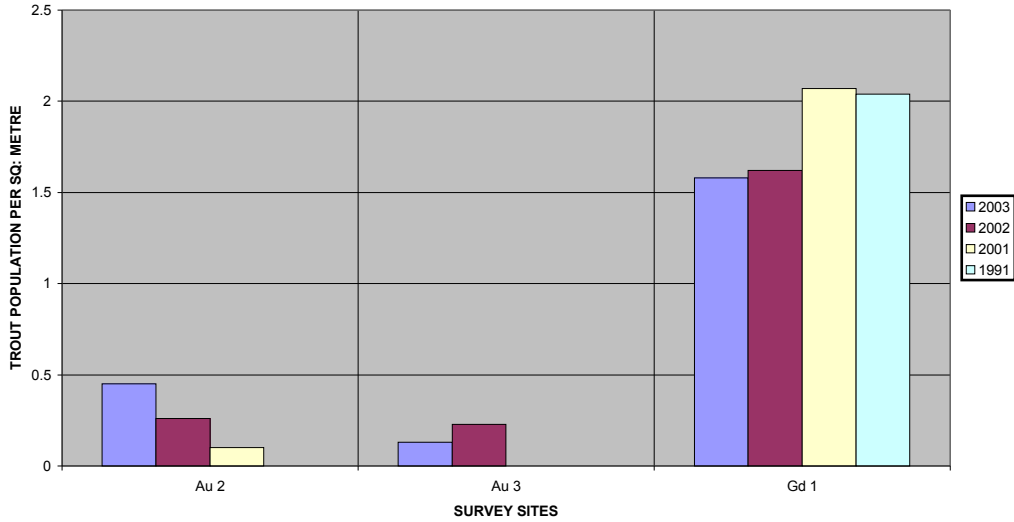


2003 COMPARISON WITH PREVIOUS YEARS UPPER DEVERON SALMON

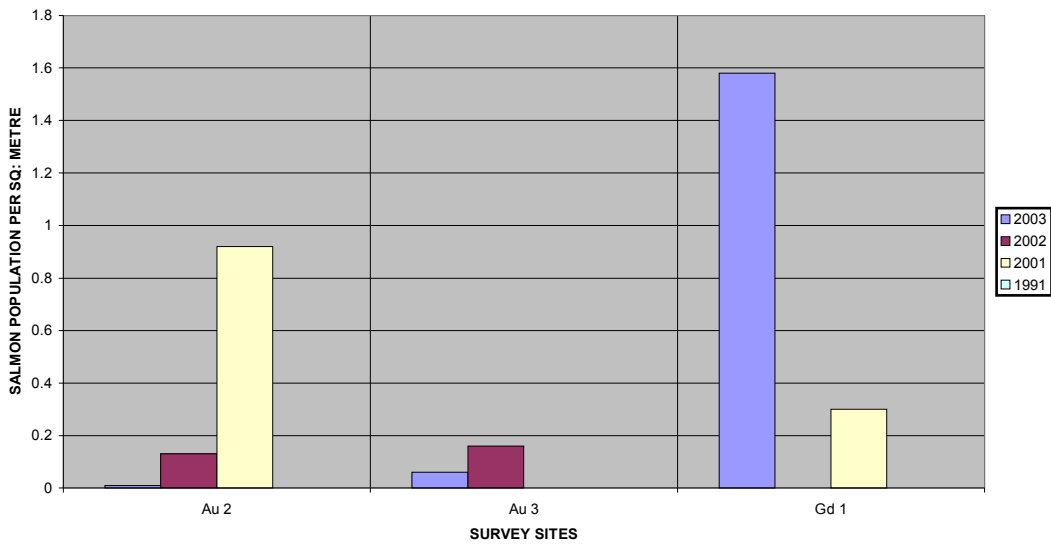


## 9. MIDDLE DEVERON SITES

2003 COMPARISON WITH PREVIOUS YEARS MIDDLE DEVERON  
TROUT

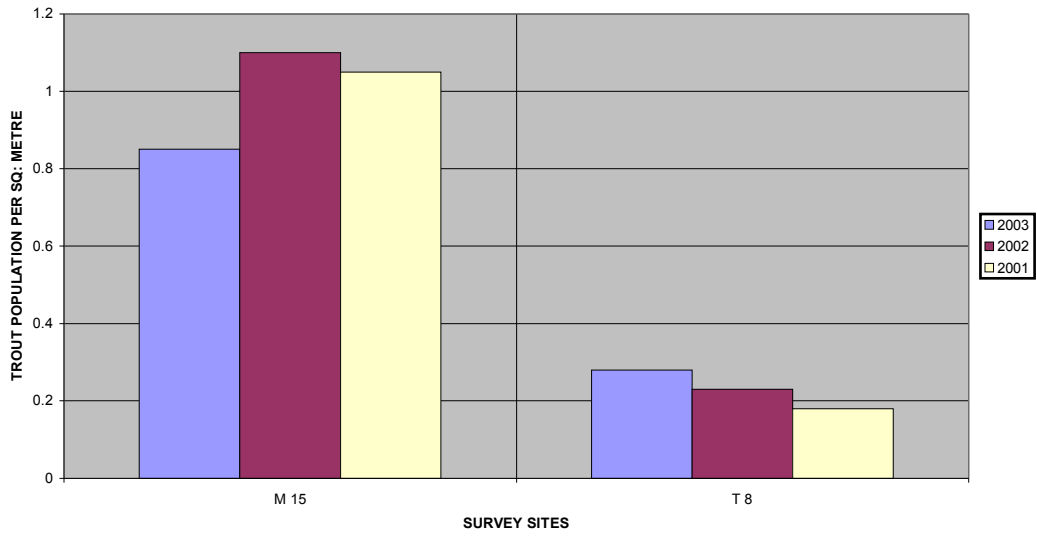


2003 COMPARISON WITH PREVIOUS YEARS MIDDLE DEVERON  
SALMON

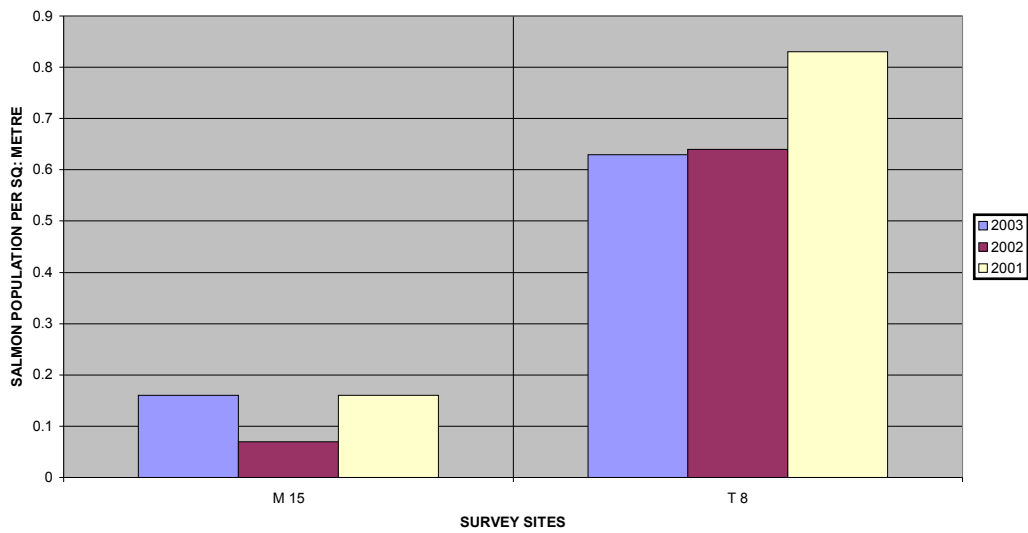


## 10. LOWER DEVERON SITES

2003 COMPARISON WITH PREVIOUS YEARS LOWER DEVERON  
TROUT

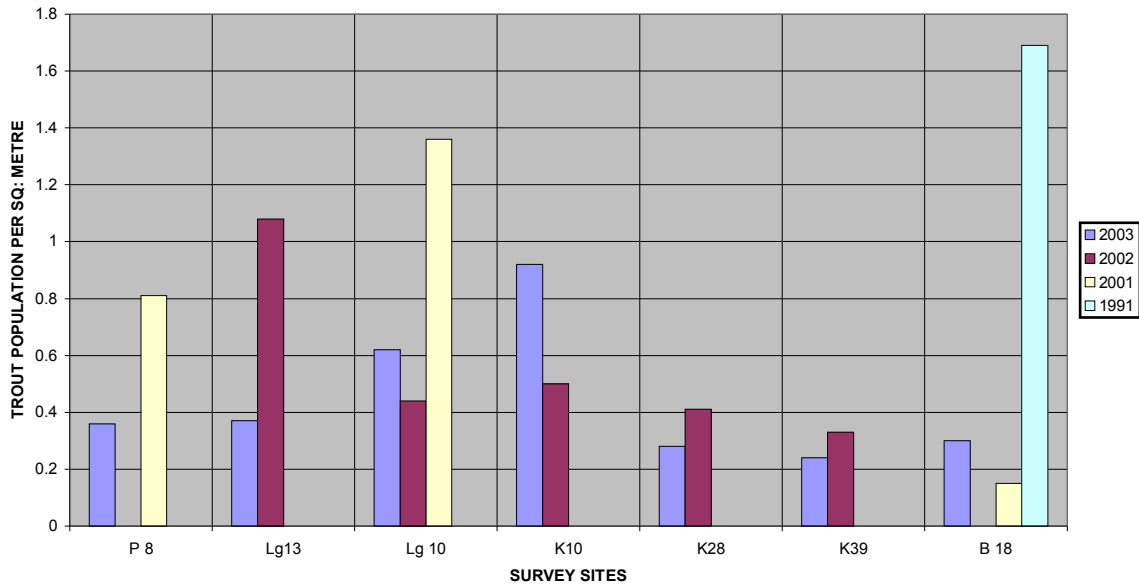


2003 COMPARISON WITH PREVIOUS YEARS LOWER DEVERON  
SALMON

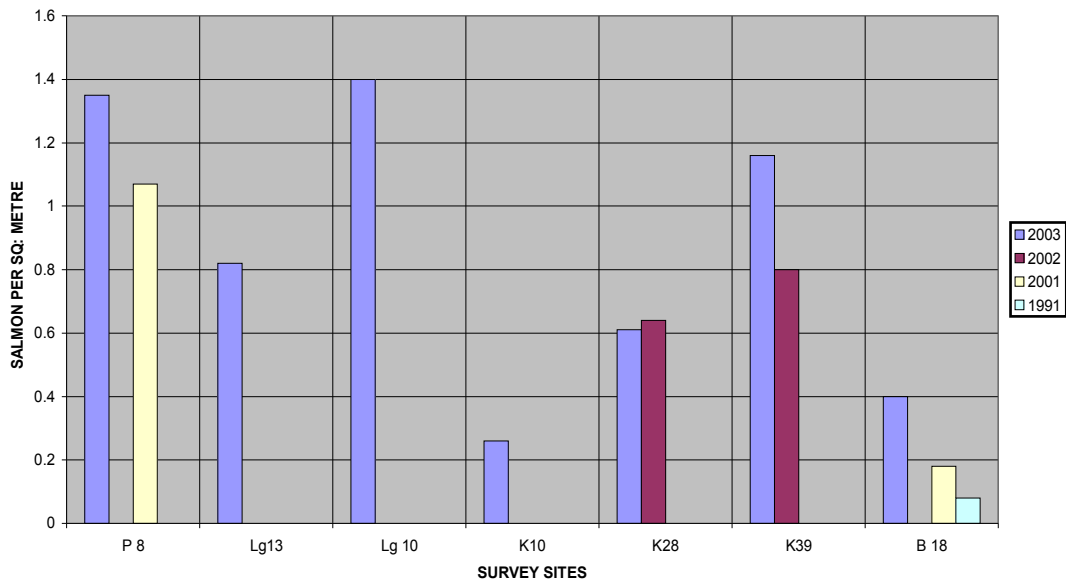


## 11. BOGIE SITES

2003 COMPARISON WITH PREVIOUS YEARS BOGIE TROUT

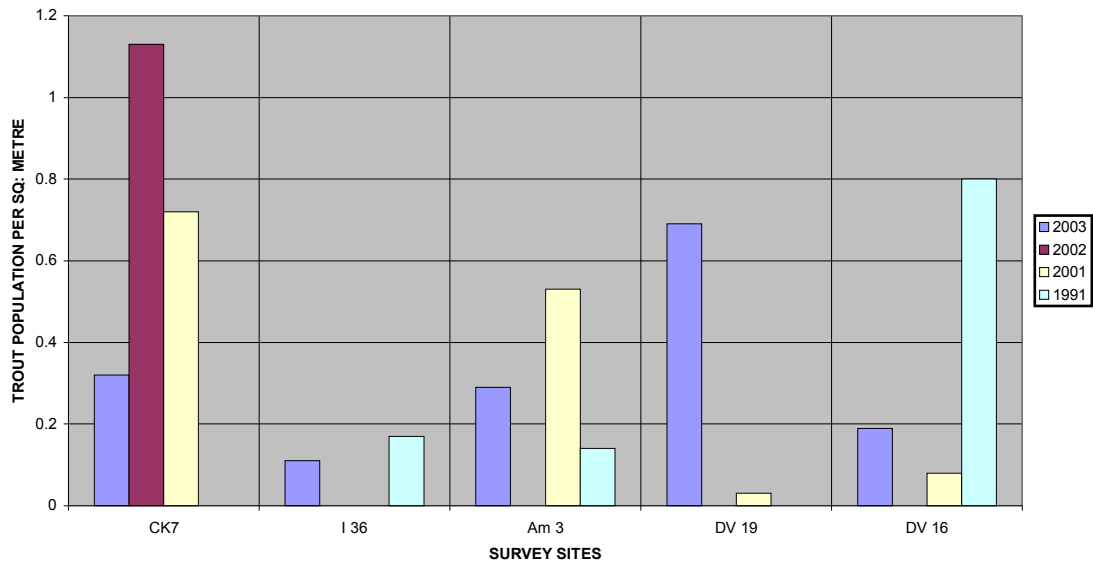


2003 COMPARISON WITH PREVIOUS YEARS BOGIE SALMON



## 12. ISLA SITES

**2003 COMPARISON WITH PREVIOUS YEARS ISLA  
TROUT**



**2003 COMPARISON WITH PREVIOUS YEARS ISLA  
SALMON**

