

## Testing of Northwest Marine Technology's Wand Detector on Chinook Salmon, 1994

In the spring of 1994, the Alaska Department of Fish and Game's Coded Wire Tag Processing Lab processed heads from 395 adipose clipped chinook salmon caught in the winter troll fishery using a Northwest Marine Technology Wand Detector purchased in May 1992. We used the Wand Detector to initially determine if the head bore a tag. If a tag was not found with the Wand Detector the head was remagnetized and tested again with Wand Detector. If a tag was still not detected it was re-tested with the standard field sampling detector and with omni-directional tube detector. Technicians used sampling detectors (FSD) to locate the tag once dissection began. All work was done in the Juneau lab. For each head tested we recorded:

- if the head did not signal with the wand detector
- if the head did not signal with FSD
- if the head signaled with the FSD only
- the location of the tag in the head
- distance of the tag from nearest external skin

The following results were found.

### Fork length and tag depth:

Heads from 395 adipose clipped troll caught chinook were checked for tags with Wand Detector

#### Fork-length

Mean	=	816.0	mm
Std.Dev.	=	61.2	mm
Minimum	=	667.0	mm
Maximum	=	977.0	mm

Of these, 374 were found to have tags (either with Wand and/or FSD)

#### Fork-length

Mean	=	815.3	mm
Std.Dev.	=	60.9	mm
Minimum	=	667.0	mm
Maximum	=	977.0	mm

#### Distance to nearest external skin

Mean	=	15.70	mm
Std.Dev.	=	5.37	mm
Minimum	=	0.77	mm
Maximum	=	32.31	mm

Of these, 366 were found with Wand Detector

#### Fork-length

Mean	=	815.4	mm
Std.Dev.	=	61.3	mm
Minimum	=	667.0	mm
Maximum	=	977.0	mm

#### Distance to nearest external skin

Mean	=	15.49	mm
Std.Dev.	=	5.20	mm
Minimum	=	0.77	mm
Maximum	=	32.31	mm

8 tags could not be found with the Wand Detector but were found with FSD

#### Fork-length

Mean	=	811.0	mm
Std.Dev.	=	45.3	mm
Minimum	=	710.0	mm
Maximum	=	844.0	mm

#### Distance to nearest external skin

Mean	=	25.31	mm
Std.Dev.	=	3.98	mm
Minimum	=	19.78	mm
Maximum	=	30.90	mm

# Testing of Northwest Marine Technology's Wand Detector on Chinook Salmon, 1994

## Tag Placement:

Tag Location										
	Betw. nares	Med.-> Rt. nares	Med.-> left nares	Cntr Snout	Cntr. Betw eyes	Front of rt. eye	Med.-> rt. eye	Front of left eye	Med.-> left eye	Total
<b>Tags found with Wand and/or FSD</b>										
# observed	156	58	52	53	19	7	10	9	10	374
%	41.7%	15.5%	13.9%	14.2%	5.1%	1.9%	2.7%	2.4%	2.7%	
<b>Tags found with Wand</b>										
# observed	156	58	52	53	15	6	8	9	9	366
%	42.6%	15.8%	14.2%	14.5%	4.1%	1.6%	2.2%	2.5%	2.5%	
<b>Tags not found with Wand</b>										
# observed	0	0	0	0	4	1	2	0	1	8
%	0.0%	0.0%	0.0%	0.0%	50.0%	12.5%	25.0%	0.0%	12.5%	

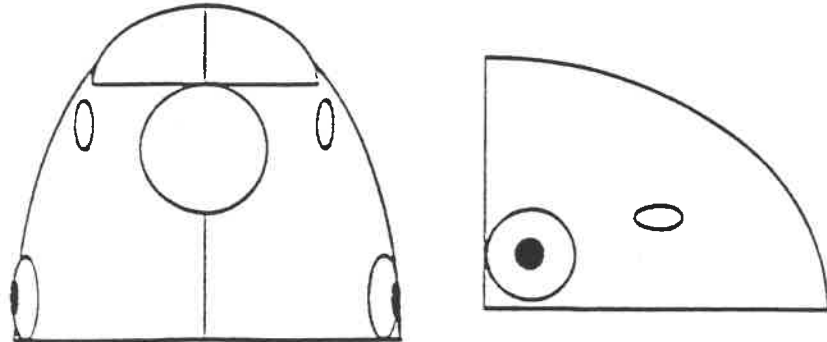
## DIAGRAMMATIC SALMON HEAD VIEW OF TAG PLACEMENT

The following description of tag placement is not to scale. The tag depth is the distance from the tag to the nearest external skin. Heads were systematically sectioned and distances measured by a caliper. Due to freezing/thawing, head compression due to the fish being struck when killed, and lack of a stereoscopic view the distances in millimeters should not be considered precise.

Head Number: \_\_\_\_\_; Species: \_\_\_\_\_; Date: \_\_\_\_/\_\_\_\_/94\_.

Depth: \_\_\_\_\_ mm; Location: \_\_\_\_\_.

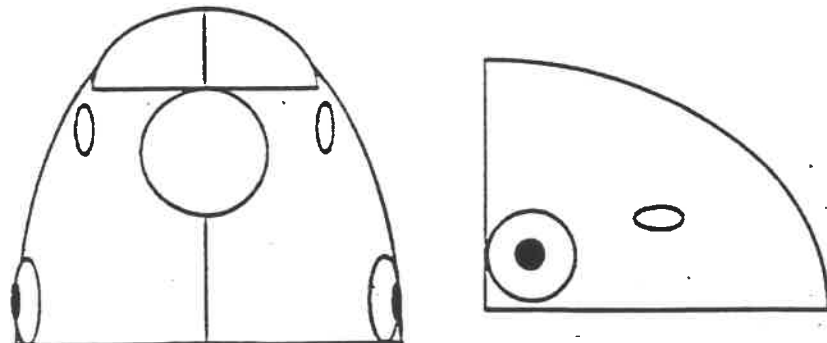
Comments:



Head Number: \_\_\_\_\_; Species: \_\_\_\_\_; Date: \_\_\_\_/\_\_\_\_/94\_.

Depth: \_\_\_\_\_ mm; Location: \_\_\_\_\_.

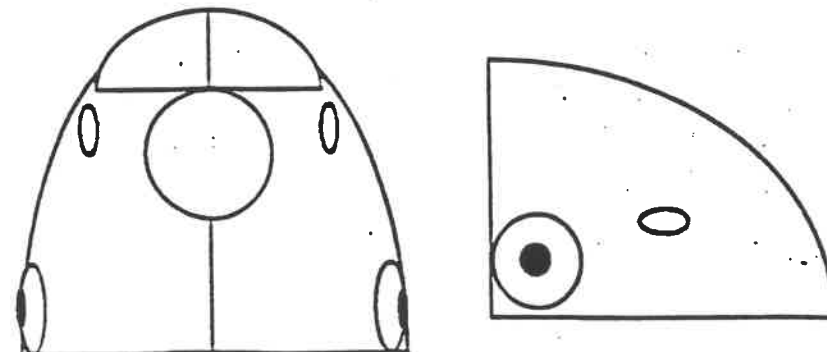
Comments:



Head Number: \_\_\_\_\_; Species: \_\_\_\_\_; Date: \_\_\_\_/\_\_\_\_/94\_.

Depth: \_\_\_\_\_ mm; Location: \_\_\_\_\_.

Comments:



DORSAL VIEW

LATERAL VIEW