

## SUMMARY OF MARINE ESCAPE REPORTS:

The factors contributing to escapes can be roughly divided into six general categories:

1. **System Failure:** failure of containment structures or anchoring systems that result from a technological failure not related to nets, generally of a catastrophic nature. Can most often be attributed to extreme weather or ecological events (i.e. floods). This cause of escape has declined dramatically over the last decade and no major escapes (over 10,000 fish) have resulted from system failure in the last seven years.
2. **Boat Operations:** net tears or infrastructure damage resulting from propeller or whole boat collisions with the net pen system.
3. **Net Failure (predators):** net tears resulting from seal, sea lion or dogfish attacks.
4. **Net Failure (maintenance):** net tears resulting from poor or inadequate maintenance such as chafing of nets due to contact with abrasive equipment, failure to repair small holes, deterioration of nets with age, failure to remove dead fish or debris, etc.
5. **Net Failure (known or suspected vandalism):** fish loss resulting from a suspected or known vandalism incident.
6. **Handling:** fish loss that results during fish handling events such as fish transfer, net changes, towing, sorting, grading, harvesting, etc and is not related to failure of the integrity of a net-pen or containment structure. This type of escape can generally be directly attributed to human error.

Table 1: Summary of Causes of Reported Marine Escapes Between 1989 and 2000.

Cause	1989-1992			1993-1996			1997-2000		
	% incident	# incident	% pieces	% incident	# incident	% pieces	% incident	# incident	% pieces
1. System Failure	54.3%	19	70.7%	13.0%	3	20.2%	3.8%	1	3.3%
2. Boat Operations	8.6%	3	2.8%	17.4%	4	10.1%	15.4%	4	15.4%
3. Net Failure (predators)	11.4%	4	1.6%	21.7%	5	25.7%	26.9%	7	8.2%
4. Net Failure (maintenance)	5.7%	2	2.8%	21.7%	5	31.9%	3.8%	1	13.2%
5. Net Failure (known or suspected vandalism)	8.6%	3	19.2%	0.0%	0	0.0%	7.7%	2	32.2%
6. Handling	11.4%	4	2.9%	21.7%	5	7.0%	42.3%	11	27.7%
7. Unknown	0.0%	0.0%	0.0%	4.3%	1	5.1%	0.0%	0.0%	0.0%
<b>Total incidents</b>		<b>35</b>			<b>23</b>			<b>26</b>	
<b>Average Pieces</b>			<b>215123</b>			<b>39561</b>			<b>60424</b>

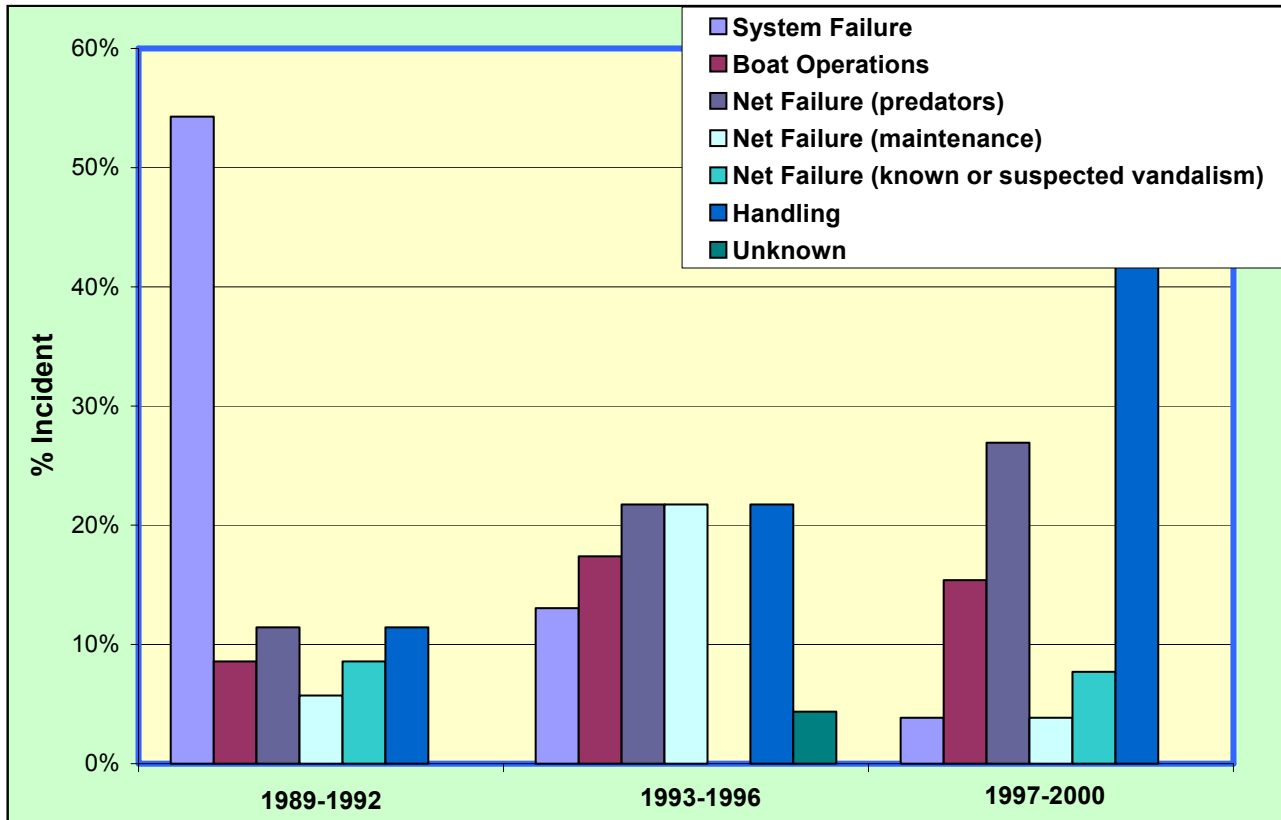
Data compiled from Atlantic Salmon Watch program and escape reports submitted to the Ministry of Agriculture, Food and Fisheries

% incident: percentage of escape incidents over a four year interval

# incident: total number of escape incidents over a four year interval

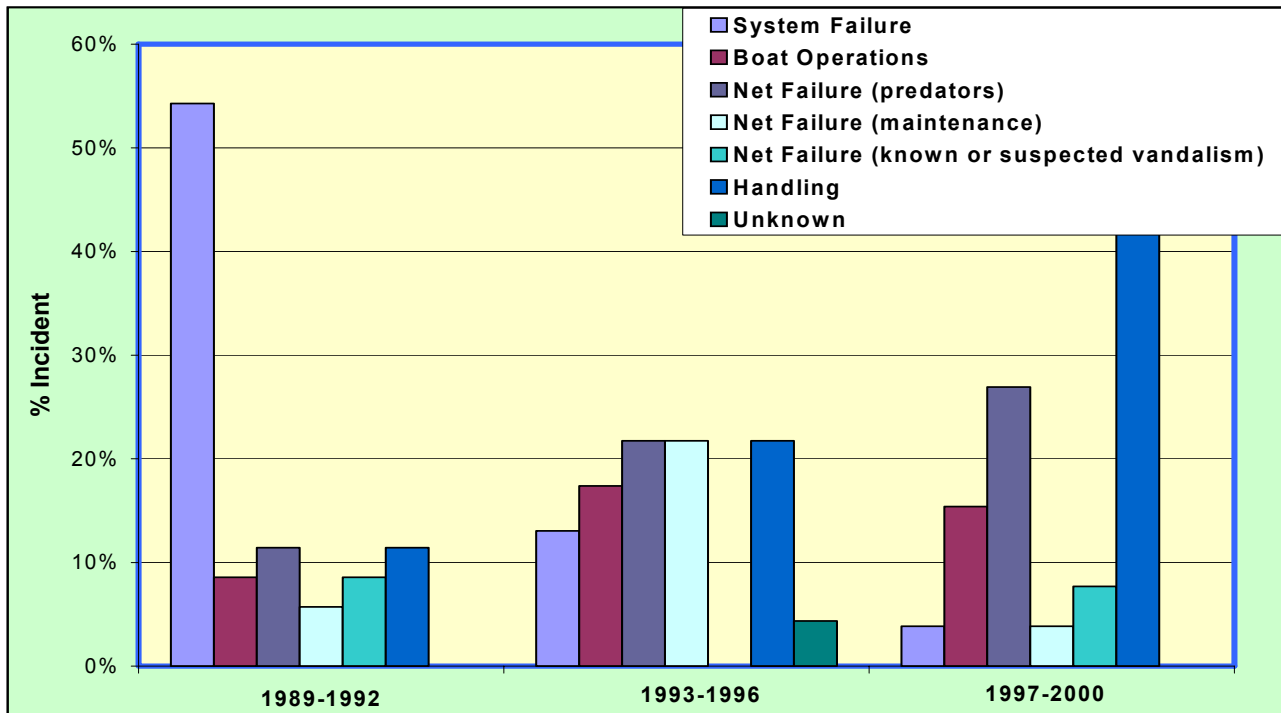
% pieces: percentage of the total number of fish lost over a four year interval

Figure 1: Causes of Marine Farmed Salmon Escapes by Percentage of Reported Fish Lost.



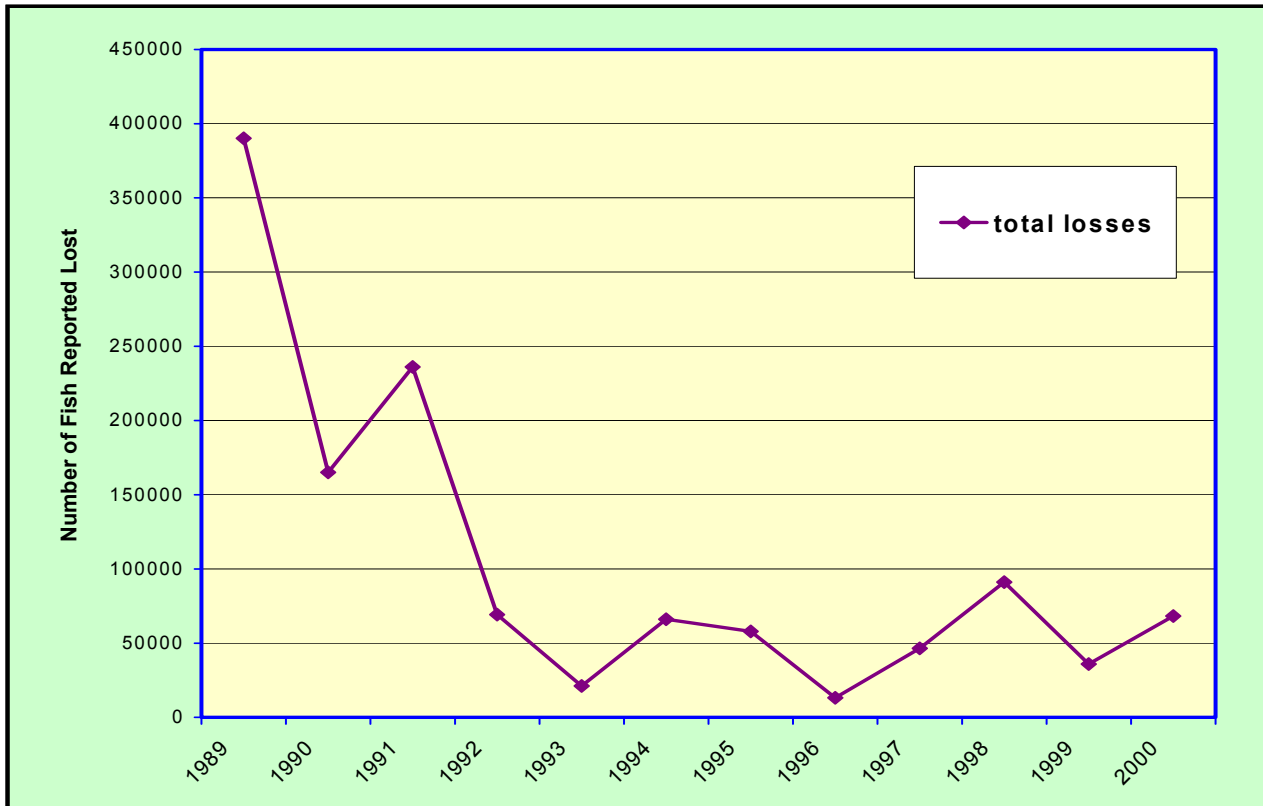
Data compiled from Atlantic Salmon Watch program and escape reports submitted to the Ministry of Agriculture, Food and Fisheries.

Figure 2: Causes of Marine Farmed Salmon Escapes by Percentage of Reported Incidents.



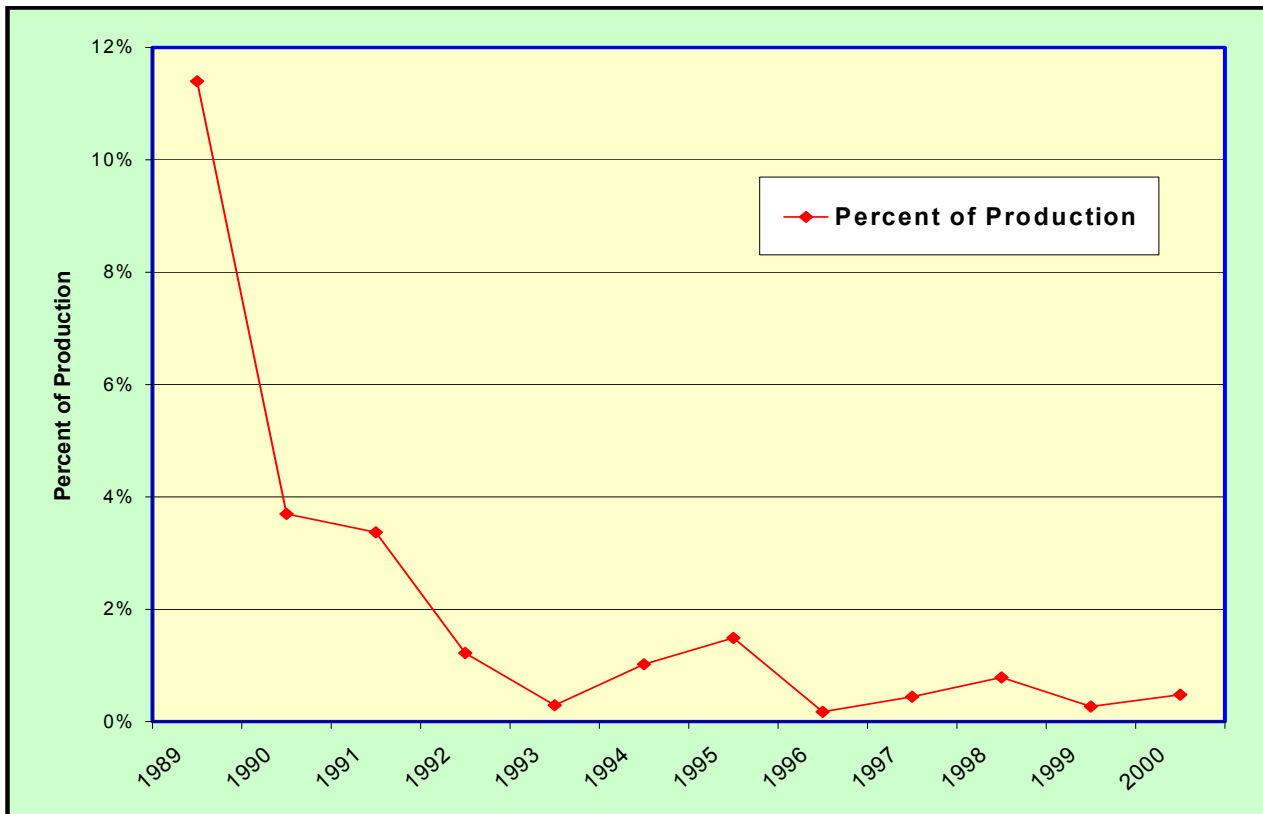
Data compiled from Atlantic Salmon Watch program and escape reports submitted to the Ministry of Agriculture, Food and Fisheries.

Figure 3. Marine Farmed Salmon Losses in British Columbia 1989-2000



Data compiled from Atlantic Salmon Watch program and escape reports submitted to the Ministry of Agriculture, Food and Fisheries.

Figure 4. Marine Farmed Salmon Escapes as a Percentage of Production.



Data compiled from Atlantic Salmon Watch program and escape reports submitted to the Ministry of Agriculture, Food and Fisheries.