

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
FISHERIES CENTER
SEATTLE 5, WASHINGTON

January 3, 1957

NMB 4

Dr. Allyn H. Seymour
Marine Biologist, Biology Branch
Division of Biology and Medicine
U.S. Atomic Energy Commission
1901 Constitution Avenue N.W.
Washington 25, D.C.

Dear Dr. Seymour:

In response to your letter of December 27, 1956:

It was intended to include data on the fish. A copy of the draft of the table is enclosed. The results of analysis with the gamma spectrometer will also be included; you may recall seeing the rough draft of the figure which includes flying fish liver. A copy of this figure is also enclosed.

The plankton-surface water ratios as we have calculated them are as follows:

1. Average of ratios of plankton activity:surface water (filtrate plus filter activities) is 2000:1. The minimum ratio is 23:1 and the maximum is 15000:1. The median is 790:1.
2. The ratio of the average plankton activity:average surface water (filtrate plus filter activity) is 823:1.

The filtrate plus filter activities are used for the water values to make possible direct comparison with the Troll and WALTON ratios. The ratio of the average plankton activity:surface water filtrate activity for the MARSH samples is 1220:1. This might actually be a more realistic ratio in that one is presumably comparing only the activity in solution with that in the plankton. Variability is so great, however, that for purposes of generalized approximation a ratio of 1000:1 seems reasonable and we have so stated in the rough draft of the MARSH report. This would only be true, of course, at a time following fallout contamination comparable to the time of the MARSH survey following the 1956 test series.

The value "300" for the plankton:water activity in the Troll report which you had wondered about is given in the text on page 8, paragraph 3 ". . . zooplankton activity appears to be 300 times the activity of sea water per unit weight . . ."

Your copy of the MARSH data, which you took with you to Washington may have an incorrect value for the plankton activity at station 28. This should be 108, not 1082.

Yours sincerely,
Lauren R. Donaldson
Lauren R. Donaldson
Director

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LRD:gb

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Director

Radioactivity of Fish Caught on the MARSH Survey
 d/m/g (wet)

Skipjack Taken Near Station 23:

		<u>Light Muscle</u>	<u>Dark Muscle</u>	<u>Liver</u>
Specimen	"A"	93	139	188
"	"B"	74	109	170
"	"C"	80	137	200
Average		<u>82</u>	<u>128</u>	<u>186</u>

Flying fish Taken from Stomach of Skipjack (Specimen "A" above):

	<u>Muscle</u>	<u>Liver</u>
	119	--

Flying fish Taken Near Station 54:

	<u>Muscle</u>	<u>Liver</u>
	360	7460

Homogenate of Tissues from Fifty Reef Fish Taken at Guam:

	<u>Muscle</u>	<u>Liver</u>
Aliquot 1	70	167
" 2	105	
" 3	156	
Average	<u>110</u>	<u>167</u>

Values for Plankton Activity Divided by Values for Surface Water Activity (filtrate + filter, less K⁴⁰) on an Equal Weight Basis

23	310	1500
29	320	1500
38	350	1500
42	420	1700
46	500	1900
53	510	2000
59	510	2000
73	520	2100
73	610	2200
90	610	2300
94	760	2300
99	790	2600
100	850	3100
110	870	3500
120	950	3700
130	970	7600
160	970	8600
180	1000	8900
190	1100	9300
190	1100	12000
200	1200	14000
220	1200	14000
280	1400	15000
280	1400	
280	1500	

Average 2000
Minimum 23
Maximum 15000
Median 790