

STATE OF NEW HAMPSHIRE

INTER-DEPARTMENT COMMUNICATION

*Merr P.*

DATE July 16, 1969

FROM Philip H. Wightman  
Fisheries Biologist

AT (OFFICE) Fisheries Division

SUBJECT Merrimack River Bow Steam Plant - Thermal & Siltation Problems

TO Arthur E. Newell, Supervisor of  
Fisheries Research

the  
On Thursday July 10, 1969/ following operations were noted in the  
effluent canal below the Bow Steam Plant.

A power shovel operated by Weaver Bros. Construction Company was  
dredging the canal from its underground source to a point opposite  
the stream which comes from the sediment pool behind the power  
plant. Operation had commenced Wednesday, July 9 and were terminated  
on July 10 at the end of the working day. A bulldozer was also  
operating in conjunction with the shovel with the net result being a  
raw bank on the west side of the canal which washed badly during the  
weekend rains. Visual evidence of silt was noted as far south in the  
main river as Station S-14 on Thursday.

Adult fish which were trapped in fyke nets below the siltation source  
did not show any evidence of distress or mortality. However, the  
question which remains unanswered is what effect this problem had  
upon the juvenile shad which are located in this section of the river  
at present.

Also of considerable concern is the fact the Rustak recording instru-  
ment, which is located at the entry of the heated water into the canal,  
pegged beyond its maximum of 112° F. around 11 o'clock Thursday a.m.  
for several minutes. Whether this was caused by a recirculation due  
to the dredging operation or is a true temperature reading of the  
heated effluent, I cannot say. as I was on the river during this time  
and did not check temperature until 4 o'clock when the critical time  
had passed.

River conditions during Thursday were low - H<sub>2</sub>O levels and low flows -  
as has been the case this summer. The normal river surface temperature  
was 76 at 1255 at N-5. However, a warming trend was in evidence at N-4  
where a temperature of 80° F at the surface was recorded at approximately  
the same time. In other words, there was evidence of the warm water  
moving north due to a southerly breeze and low flow on this day.

PHW/eem