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# VIMS Monitors Effects of Flood Waters on James River Seed Oysters

Virginia Sea Grant Marine Advisory Program

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VIMS

# Marine Resource Advisory

NO. 30

Virginia Sea Grant Marine Advisory Services at VIMS/William and Mary

November 1985

## VIMS Monitors Effects of Flood Waters on James River Seed Oysters

Early November's abnormally high rainfall and subsequent large freshwater flow into oyster-producing areas, particularly the James River seed beds, have caused great concern within the oyster industry. While the Institute cannot alter the physical situation, we can monitor the effects of this event and alert the oyster industry to our findings.

At this time, the Institute has increased the monitoring of salinity changes within the James River. This is being accomplished through an ongoing program which develops salinity and temperature profiles for the major Virginia rivers. Additionally, during the week of November 18-23, personnel from the oyster biology section of VIMS will be conducting a bottom survey of the James to determine size distribution of all oysters, as well as estimating survival of young oysters (yearlings and spat). By combining the information gathered through these activities, a better evaluation of any freshwater effects on the oyster stocks can be determined.

Based upon experiences after Hurricane Agnes in 1972, we have some indications of what may occur within the James River seed area. It is estimated that at least two to three million tons of silt and sediment may be swept downstream because of this recent heavy rainfall. These materials, however, will not be evenly spread over the bottom, but will be focused in zones of deposition. The major deposition areas will be in the Burwell Bay area, in the main ship channel, and the

mouths of tributaries, particularly along the southern shores of the river. While there could be localized siltation problems on the deeper oyster rocks along the shoulders of any channels, wide-spread over-silting of oyster rocks is not likely to be a problem.

Again based on Agnes experiences, we can speculate on impacts due to short-term lowered salinities within the seed area. At this time, negligible impact is expected from the Wreck Shoal area downriver. The upper end of the seed beds to Hog Island could experience mortalities ranging as high as 50 percent. Fortunately, the VIMS summer shell string surveys of oyster strike have indicated that the majority of 1985 strike has occurred in the lower portion of the seed area.

A beneficial result could be realized regarding diseases and predators within the seed beds. Due to the decreased salinity, there should be no increase in disease incidence. Furthermore, a large decrease in predator abundance could be expected to occur as a result of the freshwater input.

Following the completion of the bottom survey at the end of this month, the Institute will issue further advisories concerning the condition of the oyster stock within the James River. At that time you will receive by mail a more detailed analysis of any impacts on the seed beds. In the meantime if you have additional questions, please contact Dr. Roger Mann at VIMS, Gloucester Point, VA 23062, (804) 642-7360.



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Susan Schmidt . . . . . Editor

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