

waters and shore, and so apparent the next morning, one is baffled that it can happen so often. If the owners of vessels become responsible for spilling, leaking, pumping the bilges, et cetera, we wager that crewmembers will become instantly intelligent in their operations. It is our hope that the Secretary can issue regulations that can and will prove negligence that holds up under court action. States have struggled with provisions, regulations, laws, and inspections only to be defeated in actual practice.

EFFECTS OF OIL ON OYSTER PRODUCTION

In the various areas, oil affects our industry in different ways. Should a substantial oil spill occur in an estuary growing shellfish, we would hope it could be removed before sinking or being sunk. Oil eventually sinks, and oysters have a free-swimming larvae stage, during which they are helplessly exposed to all kinds of environmental conditions. Oil in water has a definite affinity for other material. Silt floating in water soon is attached to oil that might be present. The specific gravity of the mass increases and it gradually sinks to the bottom. The rapidity of sinking is dependent somewhat upon winds, amount and size of particles of the silt. If the silt load is high and the particles large the oil sinks rapidly. If the silt is low it may float for some days and be widely dispersed by the winds and current. In either case the result is bad for marine organisms. Oil is even attracted to microscopic plants and animals. The organisms no longer remain suspended but sink to the bottom to die. The late Dr. Thurlow Nelson has reported an extensive mortality of soft-shell clams from a heavy film of oil being deposited at low tide on the bed. Dr. Nelson said, "Oil is, gallon for gallon as thrown out, the most destructive to aquatic life of all the foreign substances now entering our coastal waters." Oil incorporated into the tissues of oysters and clams causes them to be inedible even if it does not cause their demise from smothering or from toxic effects.

In States with tidal areas as in North Carolina, South Carolina, Georgia, Alabama and in the Gulf States, oyster reefs form all along the tidal areas and on reefs in the shallow bays that are often exposed at low time. Oil not only kills the spat—that means the baby oysters—in these tidal areas but renders the shells unfit as clutch. In other words, the young oyster cannot or will not set on an oily shell. The potential for any such shore or reef hit by oil slick is negated.

In the gulf, where oil is produced, the older rigs send oil ashore by small, numerous feeder lines that are often laid in shallow water and subject to breakage and leakage due to age, location, and being damaged by boat action. Unless these leaks are really major, they go undetected for long periods of time. However, the seepage, if near an oyster bed, ruins them as food. In such cases, the oyster farmer is out of luck and may have gone out of business. It is virtually impossible to establish responsibility in these cases.

In the process of drilling wells, the discharge is supposedly collected and the oil is burned in pits ashore. The oystermen of Louisiana testify that the entire mess is too often dumped wherever it is conveniently undetectable. There are not enough supervisory people available in Louisiana to make the State law effective. Dr. Paul Galtsoff and