Lt. Bob Hawks   May 22, 1977

Fish Mortality, Estero Americano - Report of Investigation, 4/13/77

On the morning of 4/13/77, I received a message from Mike Rugg to meet Jerry
Tinkess, et al, of the University of California Bodega Marine Lab, at Valley
Ford, Marin County, at 1000 hours. A motorized skiff was available, and with
it we proceeded to the mouth of the Estero, which was closed off from the
ocean by a sand beach.

At the mouth, I counted hundreds of dead fish: 300+ starry flounder, 27 large
striped bass, and an estimated 2+ sculpin, and 3+ crabs. Dissolved oxygen
readings averaged about 13 mg/l while salinity was 26 ppt.

It was my understanding that, at the time of your investigation the previous
week, you took water, fish and a pesticide can for storage and analysis at
the Bodega Marine Lab. During our inspection the Bodega personnel informed me
they did not have the right equipment for analyzing samples and asked me to
take them back to the Fish and Game Lab for analysis. I agreed to do so and
took the samples to our lab until such time I could further determine if
there was a naturally caused dirunal D.O. sag in the Estero.

I returned to the location on 4/20/77 at 0530 hours. Two D.O. tests as
performed by the Winkler titration indicated the D.O. was 3.0 mg/l. On the
basis of this one re-sampling endeavor, I believed that low dissolved oxygen
may have caused the kill, however, initial reports of striped bass boiling at
the surface and jumping out and up onto the sand bar makes me suspect there
may also have been some acutely toxic agent involved in the initial kill.
Thus, the original cause of the mortality may be masked by the apparent
current D.O. sags.

The pesticide can and fish samples you collected are being forwarded to the
Department's Pesticide Laboratory for further analyses. Therefore, final
results pertaining to this incident are pending.

James G. Lemieux
Aquatic Biologist Region 3

JGL/gmc

SURNAME