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TO: Jon Neel and Gary Bailey
THROUGH: Bill Yake
FROM: Art Johnson *AJ*
SUBJECT: Completion of Sevin Report
DATE: July 7, 1987

Attached is my final report reviewing the available data on Sevin.

Fisheries reviewed drafts of this report on two occasions. I met with Eric Hurlburt on June 10 to discuss their comments (Hurlburt memo of June 5) on an April 15 draft. Based on that discussion, I submitted a revised draft dated June 12. Fisheries responded with over 60 individual comments (Hurlburt memo of June 22)--over twice the number than on the earlier draft. My response to these comments and changes made in the final are detailed on an attached list. A copy of the June 12 draft containing Fisheries' comments is also attached.

AJ:cp

Attachments

<u>Comment Number</u>	<u>Response</u>	<u>Change in Report</u>
1.	Given existing data gaps, this acknowledgment of Fisheries is generous.	None
2.	--	Delete "Fisheries;" add "using present culture methods."
3.	Land Use Board of Appeals ruled the OFWC "could not protect the estuary or assume minimum adverse effects from the pesticide without determining what organisms live in the estuary and whether the pesticide would adversely affect those organisms."	Add sentence giving pivotal issue in ruling.
4a.	Fisheries data unlikely to have influenced above ruling.	None
4b.	--	Delete reference to "Fisheries."
5.	--	Rephrase to clarify EIS was pointing out data gaps.
6.	These are the reasons in letter to Fisheries.	Substitute Fisheries description of SEIS scope.
7.	--	Delete last two sentences.
8.	Concentrations are an order of magnitude apart. Data do not establish that concentrations dropped below EC-50s for sensitive crustaceans.	None
9.	Data source was Hurlburt (1986), a final report in which only means are reported.	Reword
10.	--	Substitute "probably underestimate actual concentrations"
11.	Paragraph was changed in response to first round of comments to include concept of exposure duration.	Refer reader to Table 1 which has duration specified.
12.	Regardless of study objectives, quality data are lacking beyond four hours.	None
13.	Potential worst-case impacts are for largest treatments; these have not been monitored.	None
14.	--	Add "biological activity"

<u>Comment Number</u>	<u>Response</u>	<u>Change in Report</u>
15.	Only half-life data reported in literature are for freshwater. Understanding of carbaryl degradation rates is better served by including these data than deleting them.	Indicate data are from laboratory experiments; add estimate of naphthol half-life in seawater from Lamberton and Claeys experiments.
16.	--	Delete sentence.
17.	This is only published water quality criteria from an authoritative source.	None
18.	Acute	None
19.	Question being addressed is: "What concentrations are toxic to marine organisms?" Larvae of other crustacean species are potentially at risk for similar exposure.	None
20.	--	Delete sentence.
21.	See 20, above.	See 20, above.
22.	Highest concentration is clearly above reported detection limit.	Reword.
23.	--	Change as suggested.
24.	Statements erroneously claimed to be supported by data should be questioned.	None
25a.	In retrospect, sample size of 2 is not completely unreasonable.	Delete comment.
25b.	Small relative to size of some treatments. However, probably a questionable comment.	Delete comment.
26.	"Mud temperatures were not obtained during actual spraying when summer conditions prevailed" (Hurlburt, 1986).	None
27/28.	Statement is authored by recognized experts in the field (including Armstrong); simple failure to recolonize is mentioned. (Also see changes in response to comments 29 and 30.)	None
29.	--	Reword along lines suggested.
30.	---	Add Fisheries' opinion.

<u>Comment Number</u>	<u>Response</u>	<u>Change in Report</u>
31.	This is the author's stated hypothesis.	Quote Lamberton and Claeys.
32.	--	Refer reader to appropriate discussion.
33.	Fisheries misinterpreted these data, point of Fisheries' comment unclear.	Delete last sentence.
34.	Correct, experts are not in agreement, but 1 mm should suffice for detecting impacts.	Delete comment on screen size.
35.	Shrimp would probably characterize it as being killed.	None
36.	--	Substitute "insufficient".
37.	Insufficient information in table to assess quality of burrow count data; total species and organisms numbers lump algae, invertebrates, and fish, therefore, not useful.	None
38.	--	Specify YOY.
39.	Historical predominance of older crabs is mentioned later in paragraph.	None
40.	For 1984, SLAE were defined as 40 mm or larger (Hurlburt, 1986, p. 5).	Specify 1+ and older for 1984.
41.	Especially light is Armstrong's terminology.	None
42.	--	Insert "several".
43.	Touché, but the concern is underestimated mortality.	None
44.	--	Substitute "is aware".
45-47.	Armstrong and Doty were contacted.	Summarize results as per conversation with UW; delete discussion based on draft.
48.	--	Correct citation.
49a.	Received Hurlburt's memo on June 29.	Delete; describe Hurlburt's assessment.
49b-53.	See 45-47, above.	See 45-47, above.

<u>Comment Number</u>	<u>Response</u>	<u>Change in Report</u>
54.	Was a useful critique of only existing proposal addressing data gaps at time of draft; agree that it is now superfluous.	Delete
55.	--	Delete
56.	--	Delete
57.	--	Substitute "conclusion".
58.	--	Reword and define short-term less than as 1 year.
59.	--	None
60.	--	Specify personal assessment.
61.	Yes	None
62.	--	None
63.	--	Reword