

APPENDIX C

CORRESPONDENCE



January 4, 1985
ENW-POV2-L-85-013

Brian Hauger
Department of Game
500 N. Capitol Way
Olympia, Washington 98506

Dear Mr. Hauger:

This letter documents the accomplishments of the 19 December 1984 meeting of the Habitat Evaluation Procedure (HEP) evaluation team. The purpose of the meeting was to finalize the following tasks for applying the HEP to the Port of Vancouver Fish and Wildlife Project.

- o Classification of habitats
- o Selection of evaluation species
- o Identification of life requisites and habitat parameters
- o Selection of HSI models
- o Formulation of sampling design

Attendants at the meeting included:

- o Brian Hauger, Washington Department of Game
- o William Nelson, Washington Department of Game
- o Elaine Rybak, U.S. Fish and Wildlife Service
- o Ralph Rogers, Environmental Protection Agency
- o Sam Casne, U.S. Army Corps of Engineers
- o John J. Brueggeman, Envirosphere Company

The meeting was held at the U.S. Fish and Wildlife Service's Olympia office between 9:00 a.m. and 12:30 p.m.

The HEP team classified the Port of Vancouver project area into six habitat types:

- o Deciduous shrub/scrub
- o Deciduous forest
- o Deciduous forest wetland
- o Cultivated land
- o Pasture/grassland
- o Wetland

Wetland was further divided into palustrine, lacustrine, and riverine. The team decided that the definition and habitat classification system of wetlands will follow those of the U.S. Fish and Wildlife Service. The level of resolution for the habitat classification was agreed by the team to be II.

The HEP team selected the following ten evaluation species or groups of species for the project:

- o Mink
- o Muskrat
- o Dabbling ducks
- o Canada goose
- o Red-tailed hawk
- o Great blue heron
- o Willow flycatcher
- o Savannah sparrow
- o Downy woodpecker
- o Long-toed salamander

The Townsend vole, American kestrel, beaver, and wood duck were considered for inclusion into the list but were eliminated because the team felt that the ten species chosen adequately represent the habitats in the project area.

The HEP team agreed that the HSI models developed by the USFWS for the evaluation species are suitable for the Port of Vancouver Project. Correspondingly, the team concurred that the life requisites and habitat parameters defined in the models are sufficient for use on this project. The exact parameters to be measured or evaluated will be determined after the team reviews the models. A list of parameters will be compiled for review which will be finalized at the next meeting.

Lastly, the HEP team decided on a sampling design framework. The framework includes stratifying the project area into four areas. The four areas coincide with the properties owned by the Port of Vancouver, Alcoa, Washington Department of Game, and private individuals (plus county park). Within each of these areas, three plots will be sampled in cultivated lands, pasture/grasslands, and deciduous shrub/scrub, and four plots will be sampled in the other habitats. Whenever possible, habitat parameters will be measured from aerial photographs.

As I mentioned above, one more meeting will be required to finalize the list of habitat parameters for each species. This meeting will tentatively be held during the second week of January. Upon completion of this meeting, the next activity will be the field studies.

This letter documents the final decisions of the HEP team for applying the HEP to the Port of Vancouver Project. Moreover, it represents an agreement between the Port of Vancouver and the Washington Department of Game, U.S. Fish and Wildlife Service, Environmental Protection Agency, and Army Corps of Engineers that the Habitat Classification System, Evaluation Species, HSI models, and sampling design framework spelled out in this letter are final. Confirmation of this agreement is imperative if the Port of Vancouver is to proceed in using the HEP in good faith.

Mr. B. Hauger

-3-

January 4, 1985
ENW-POV2-L-85-013

Please sign your name on this letter to confirm your acceptance of this agreement.

If you have any questions, please call me.

Sincerely,

ENVIROSPHERE COMPANY

John J. Brueggeman
Project Manager

As a representative of
the Washington Department
of Game I accept this agreement:

JJB:1j1/6629A

cc: R. Gorini

envirosphere company

A Division of EBASCO SERVICES INCORPORATED

400 112th Avenue NE, Bellevue, WA 98004. (206) 451-4600



January 10, 1985
ENW-POV2-L-85-013

Brian Hauger
Department of Game
600 N. Capitol Way
Olympia, Washington 98506

Dear Mr. Hauger:

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- o Sam Casne, U.S. Army Corps of Engineers
- o John J. Brueggeman, EnviroSphere Company

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The HEP team classified the Port of Vancouver project area into six habitat types:

- | | |
|---|--|
| <ul style="list-style-type: none">o Deciduous shrub/scrubo Deciduous foresto Deciduous forest wetlando Cultivated lando Pasture/grasslando Wetland | <p>COVER TYPES TO BE REPLACED
WITH COVER TYPES IDENTIFIED
IN ATTACHMENT NO.1</p> <p><i>Brian D. Hauger.</i></p> |
|---|--|

Wetland was further divided into palustrine, lacustrine, and riverine. The team decided that the definition and habitat classification system of wetlands will follow those of the U.S. Fish and Wildlife Service. Correspondingly, the team agreed that the USFWS "systems level" will be the highest level of resolution required for classifying wetland habitats.

The HEP team selected the following ten evaluation species or groups of species for the project:

- o Mink
- o Muskrat
- o Dabbling ducks
- o Canada goose
- o Red-tailed hawk
- o Great blue heron
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As I mentioned above, one more meeting will be required to finalize the list of habitat parameters for each species. This meeting will tentatively be held during the fourth week of January. Upon completion of this meeting, the next activity will be the field studies.

This letter documents the final decisions of the HEP team for applying the HEP to the Port of Vancouver Project. Moreover, it represents an agreement between the Port of Vancouver and the Washington Department of Game, U.S. Fish and Wildlife Service, Environmental Protection Agency, and Army Corps of Engineers that the Habitat Classification System, Evaluation Species, HSI models, and sampling design framework spelled out in this letter are final. Confirmation of this agreement is imperative if the Port of Vancouver is to proceed in using the HEP in good faith.

Mr. B. Hauger

-3-

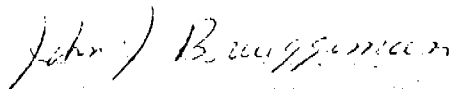
January 10, 1985
ENW-POV2-L-85-013

Please sign your name on this letter to confirm your acceptance of this agreement.

If you have any questions, please call me.

Sincerely,

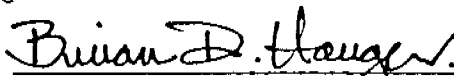
ENVIROSPHERE COMPANY



John J. Brueggeman
Project Manager

As a representative of the
Department of Game

I accept this agreement:



WITH EXCEPTION AS NOTED

JJB:lj1/6629A

cc: R. Gorini

JOHN SPELLMAN
Governor



FRANK LOCKARD
Director

STATE OF WASHINGTON
DEPARTMENT OF GAME

600 North Capitol Way, GJ-11 • Olympia, Washington 98504-0091 • (206) 753-5700

March 8, 1985

Mr. John J. Brueggeman
Envirosphere, Inc.
400 112th N.E.
Bellevue, Washington 98004

SUBJECT: Port of Vancouver HEP Study

Jay:

I am returning your correspondence of January 10, 1985 indicating Washington Department of Game's concurrence with the study parameters as identified, with the exception of habitat types identification. In consultation with personnel of WDG and USFWS, the habitat types as shown on Attachment 1 have been agreed upon, and we feel it is imperative to conduct the study using these habitat types.

If you have any questions, please call me.

Sincerely,

THE DEPARTMENT OF GAME

A handwritten signature in cursive script that reads "Brian".

Brian D. Hauger
Westside Field Operations Coordinator
Habitat Management Division

BDH:cv
Enclosures

Port of Vancouver HEP
Cover Types

UPLANDS

Agriculture

- * Cultivated Land
- * Pasture/Grassland

Undeveloped

Forest

- * Deciduous Forest

Shrubland

- * Deciduous Shrub/Scrub
- * Barren

WETLANDS AND DEEPWATER HABITATS

Wetlands

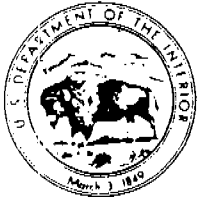
- * Forested
- * Shrub/Scrub
- * Herbaceous
- * Shore, Bottom

Deepwater

- * Riverine
- * Lacustrine

* Indicates map cover type

Adapted from: Habitat Evaluation Procedures Manual, 103 Standards
for the Development of Habitat Suitability Index Models. Release
No. 1-81



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
2625 Parkmont Lane S.W., Bldg. B-3
Olympia, Washington 98502

March 4, 1985

Mr. John J. Brueggeman
Environsphere Company
400 112th Ave. N.E.
Bellevue, Washington 98004

Re: Port of Vancouver HEP Project

Dear Mr. Brueggeman:

This responds to your January 10, 1985, letter requesting concurrence with agreements reached at the December 19, 1984, meeting on the Port of Vancouver HEP project.

In general, we concur with agreements reached at the meeting and documented in your letter. The list of evaluation species, use of FWS HSI models, and sampling design are all acceptable.

We would, however, like to suggest several changes in cover types. A list of suggested cover types is enclosed.

Please contact Elaine Rybak at (206) 753-9440 if you have questions or comments. We look forward to working with you in the future on this project.

Sincerely,

Charles A. Dunn
Field Supervisor

Enclosure

cc: WDG, Olympia (Hauger)
WDG, Vancouver (Nelson)
EPA, Seattle (Rogers)
CE, Seattle (Casne)

Port of Vancouver HEP
Cover Types

UPLANDS

Agriculture

- * Cultivated Land
- * Pasture/Grassland

Undeveloped

Forest

- * Deciduous Forest

Shrubland

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WETLANDS AND DEEPWATER HABITATS

Wetlands

- * Forested
- * Shrub/Scrub
- * Herbaceous
- * Shore, Bottom

Deepwater

- * Riverine
- * Lacustrine

* Indicates map cover type

Adapted from: Habitat Evaluation Procedures Manual, 103 Standards
for the Development of Habitat Suitability Index Models. Release
No. 1-81



July 12, 1985
ENW-POV2-L-85-10a

Elaine Rybak
U.S. Fish and Wildlife Service
2625 Parkmont Lane S.W.
Building B
Olympia, Washington 98503

Dear Ms. Rybak:

SUBJECT: METHODS FOR FISH HABITAT ASSESSMENT FOR THE PORT OF VANCOUVER

This letter is to advise you of our recommended approach for determining methods to assess resident fish habitat in the Columbia River Lowlands near Vancouver Lake, Washington. As you are aware the Port of Vancouver is considering options for future developments of the lowland areas near Vancouver Lake. Specific projects and project locations have not yet been identified. In order to eliminate or reduce adverse effects of these future projects, the Port has agreed to a pre-project inventory of fish and wildlife habitat within the region.

The Port, after consulting with wildlife agencies, agreed to a habitat inventory method involving the USFWS Habitat Evaluation Procedure (HEP). Envirosphere Company was contracted to do these studies. These methods have already been employed for the wildlife component of the inventory within the region. We are also planning to use the HEP for resident fish habitat studies within the area.

We have developed the following tables (Tables 1 and 2) as a framework for the HEP team to decide which species, life requisites, habitat parameters and methods should be used to evaluate fish habitat within the study area. Although we feel confident in the recommendation derived from the logic developed in these tables, they may be modified as the HEP team feels appropriate. Additionally, we've attached Appendix Tables A-1 to A-4 showing beach seine catches in Vancouver Lake, Buckmire Slough, Post Office Lake, and Campbell Lake as indicators of resident fish species presence and abundance within the study area.

Presently the WDG and USFWS have been the only agencies contacted concerning these fish habitat studies. We have not contacted the WDF and NMFS because the ponds and sloughs in the area are not anadromous fish habitat, although a few stray downstream migrating salmon or steelhead may be present in these water bodies in the spring. If you think other agencies should be contacted, please let us know.

After you have examined the conclusion derived from our approach, please contact me by phone with any recommended alterations by July 18, 1985. We anticipate we will be able to settle these changes by phone and eliminate the necessity for a scheduled meeting.

The following is a brief discussion of the rationale used for each table:

Table 1

The main purpose of Table 1 is to select candidate species for habitat evaluations within the area. There are two basic approaches to selecting species: (1) Selection of species with high public interest, economic value, or both; and (2) selection of species to provide a broad ecological perspective of an area (USFWS 1980). The system we propose in Table 1 attempts to consider both approaches. The left part of table under Guild Parameters presents specific guild characteristics of the resident species found within the region. The remaining part of Table 1 provides a rating system to help select the species considering guild parameters plus other criteria. The rating system considers sensitivity to construction activity as well as economic importance and understanding of the species-habitat relationships.

The final rating number was not used as the only criterion for selecting the species. The species that were selected not only had a high rating number but also were representative of different guilds as shown under the Guild Parameter part of Table 1. The rating values shown in several of the categories are based on our knowledge of the individual species in the region and expected effects of dredging and fill on these species. Although some of the ratings are subjective, we believe they accurately characterize the individual species for its consideration as an evaluation species.

Our conclusion from Table 1 is that proper assessment of resident fish habitat in local lakes of the study area will require evaluation of five fish species habitats (black crappie, largemouth bass, carp, yellow perch, and brown bullhead).

Table 2

Table 2 presents habitat suitability models recommended for evaluating these five fish species habitats in the Columbia River lowlands area. Life requisites to consider for each species include food, cover, water quality, and reproduction. Often, when using HEP, these life requisites are ranked according to their limiting value for a given species; and only those most limiting values are measured. But the similarity of specific methods used among the five species and life requisites makes elimination of any one unnecessary (Table 2). For example, when the data are collected to evaluate cover and water quality values for largemouth bass, most of the data needed to evaluate food, cover and reproduction for all five species will also be collected.

Table 2, with the exception of methods, was taken directly from developed HEP models. The methodologies we have recommended fall into two major categories: (1) line transect measurements and (2) existing water quality measurements.

envirosphere company

Ms. Elaine Rybak
METHODS FOR FISH HABITAT ASSESSMENT . . . -3-

July 12, 1985
ENW-POV2-L-85-10a

One-time line transect method will adequately measure the most important parameters other than water quality measurements for each species. The specific transect values can be adjusted by season based on knowledge of water level changes in the Columbia River since all of the local lakes are connected directly or indirectly to the Columbia River.

Water quality values can be highly transitory and can change by time of day, season, or year, so a one-time measurement is not a reliable indicator of water quality values. As a good approximation of water quality values in these ponds, Vancouver Lake water quality data collected over a 4-year period (1981-1984) will be used. All of the lakes within the region are similar, shallow mud bottom lakes, and will have similar water quality values.

Conclusion

Our interpretation of information presented indicates that an adequate assessment of the fish habitat in the study area can be done by examining fish habitat of five fish species (black crappie, largemouth bass, carp, yellow perch, and brown bullhead).

Also, line transect measurements (e.g., depth, substrate, cover) of specific water bodies and water quality data from Vancouver Lake (1981 to 1984) will define the habitat parameter needed to determine the habitat suitability index (HSI) for each area studied.

We look forward to hearing from you by July 18, 1985, with any recommendations for the fish habitat assessment procedures. If you have any questions please contact me or John Knutzen, our fishery biologist.

Very truly yours,

ENVIROSPHERE COMPANY


John J. Brueggeman
Project Manager

JK/rb/0030a

cc: J. Knutzen
R. Gorini

REFERENCES CITED

- Edwards, E.A. and K. Twomey. 1982. Habitat suitability index models: common carp. FWS/OBS-82/10.12. Habitat evaluation procedure group, U.S. Fish and Wildlife Service, Fort Collins, CO. 28 pages.
- Edwards, E.A., D.A. Krieger, M. Bacteller, and O.E. Maugham. 1982. FWS/OBS-82/10.6. Habitat evaluation procedure group, U.S. Fish and Wildlife Service, Fort Collins, CO. 25 pages.
- Krieger, D.A., J.W. Terrell, and P.C. Nelson. 1983. Habitat suitability information: yellow perch. FWS/OBS-82/10.55. Habitat evaluation procedure group, U.S. Fish and Wildlife Service, Fort Collins, CO. 37 pages.
- Stuber, R.J. 1982. Habitat suitability index models: black bullhead. FWS/OBS-82/10.14. Habitat evaluation procedure group, U.S. Fish and Wildlife Service, Fort Collins, CO. 26 pages.
- Stuber, R.J., G. Gebhart, and O.E. Maugham. 1982. Habitat suitability index models: largemouth bass. FWS/OBS-82/10.16. Habitat evaluation procedure group, U.S. Fish and Wildlife Service, Fort Collins, CO. 33 pages.
- U.S. Fish and Wildlife Service. 1980. Habitat Evaluation Procedures (HEP). ESM 102. Washington, D.C.

TABLE

METHOD FOR SELECTING EVALUATION RESIDENT FISH SPECIES FOR COLUMBIA RIVER LOWLAND WATER BODIES^{a/}

Species ^{b/}	Family	Guild Parameters		Sensitivity to Construction Activity ^{d/}	Abundance in Project Area ^{e/}	Sport Importance ^{f/}	Life History Understanding ^{g/}	HEP Model Availability ^{h/}	Rating
		Habitat ^{c/} Assoc.	Major Feeding Habit						
Black crappie	Centrarchidae	L, R	Carnivorous	3	5	5	5	5	23 ^{h/}
White crappie	Centrarchidae	L, R	Carnivorous	2	5	5	5	5	22
Largemouth bass	Centrarchidae	L, R	Piscivorous	4	5	5	5	5	24 ^{h/}
Bluegill	Centrarchidae	L, R	Carnivorous	3	3	3	5	5	19
Mouth	Centrarchidae	L, R	Carnivorous	3	3	2	2	2	11
Pumpkinseed	Centrarchidae	L, R	Carnivorous	3	2	2	3	2	12
Carp	Cyprinidae	L, R	Omnivorous	1	5	1	5	5	17 ^{h/}
Goldfish	Cyprinidae	L, R	Omnivorous	1	2	0	2	2	7
Peanut	Cyprinidae	L, R	Omnivorous	3	1	0	2	0	6
Northern squawfish	Cyprinidae	L, R	Piscivorous	3	1	0	2	0	6
Yellow perch	Percidae	L, R	Carnivorous	4	5	5	5	5	24 ^{h/}
Walleye	Percidae	L, R	Piscivorous	4	1	3	2	2	12
Brown bullhead	Ictaluridae	L, R	Benthic omnivorous	2	3	5	3	2	15 ^{h/}
Yellow bullhead	Ictaluridae	L, R	Benthic omnivorous	2	1	2	3	2	16 ^o
Channel catfish	Ictaluridae	L, R	Piscivorous	3	1	3	3	5	15
Mosquitofish	Poeciliidae	L, R	Insectivorous	2	3	0	1	0	6
Threespine stickleback	Gasterosteidae	L, R	Carnivorous	2	2	0	3	0	7
Largescale sucker	Catostomidae	L, R	Benthic omnivorous	2	1	0	2	2	7
Prickly sculpin	Cottidae	L, R	Benthic carnivorous	3	1	0	1	0	5

a/ Species are rated from 1-5 (lowest to highest) by category.

b/ Resident fish captured within Vancouver Lake and Buckmire Slough, Post Office Lake, and Campbell Lake (see Appendix Tables A-1 to A-4 for catch data).

c/ Does not include anadromous species that may be transient within these systems.

d/ L = Lakes, R = Rivers.

e/ Assumed construction activity includes vegetation removal, increased turbidity, and filling of water body. All of these activities would have negative effects to all fish.

f/ Abundance rating based on beach seine catch in Vancouver Lake, and Buckmire Slough, Post Office Lake, and Campbell Lake.

g/ Rating based on both importance within state and availability within the region.

h/ Rating of 5 indicates model available for that species. Lesser ratings indicate models for related species.

i/ Recommended candidate species for HEP studies.

TABLE 2

HABITAT SUITABILITY MODELS FOR THE FIVE FISH SPECIES SELECTED FOR COLUMBIA RIVER LOWLAND LAKES HABITAT EVALUATION

Species/ Bass	Life Requisite	Habitat Parameter	Season	Suggested Methodology
Largemouth Bass	Food	Total dissolved solids	Yearly	Vancouver Lake data
	Cover	Percent area less than 6 meters Percent bottom cover	Winter Summer	Line transect Line transect
		Water level fluctuation	Growing season	Columbia River bridge gage
	Water quality	Dissolved oxygen pH range Temperature Turbidity	Mid-summer	Vancouver Lake data
			Growing season	Vancouver Lake data
			Growing season	Vancouver Lake data
Carp	Reproduction	Percent area less than 6 meters Temperature Substrate Water level fluctuations	Winter	Line transect
			Growing season	Vancouver Lake data
			Yearly Growing season	Line transect Columbia River bridge gage
	Food-cover	Percent vegetation cover Percent littoral	Spring/summer Spring/summer	Line transect Line transect
			Summer	Vancouver Lake data
	Water quality	Turbidity Temperature Dissolved oxygen pH	Mid-summer	Vancouver Lake data
Mid-summer			Vancouver Lake data	
Yearly			Vancouver Lake data	
Other	Reproduction	Percent vegetative cover Percent littoral area Maximum depth Temperature Dissolved oxygen Storage ratio	Spring/summer	Line transect
			Spring/summer	Line transect
			Late spring Mid-summer Mid-summer	Line transect Vancouver Lake data Vancouver Lake data

a/ References for each model:

- Black crappie: Edwards et al. 1982
- Largemouth bass: Stuber et al. 1982
- Carp: Edwards and Twomey 1982
- Yellow perch: Krieger et al. 1983
- Brown bullhead: Stuber 1982

TABLE 2 (Continued)
 HABITAT SUITABILITY MODELS FOR THE FIVE FISH SPECIES SELECTED
 FOR COLUMBIA RIVER LOWLAND LAKES HABITAT EVALUATION

Species/ Life Requisite	Habitat Parameter	Season	Suggested Methodology
Yellow perch	Food/Cover	Summer Summer	Line transect Line transect
	Water Quality	Mid-summer Mid-summer Yearly	Vancouver Lake data Vancouver Lake data Vancouver Lake data
	Reproduction	Summer	Line transect
	Other	Spring Fall-winter-spring Yearly	Vancouver Lake data Vancouver Lake data Vancouver Lake data
Brown bullhead	Food		Vancouver Lake data
	Cover	Summer Summer Yearly	Line transect Line Transect Maps
	Water Quality	Mid-summer Summer Yearly Growing season	Vancouver Lake data Vancouver Lake data Vancouver Lake data Vancouver Lake data
	Reproduction	Early summer Early summer Early summer Summer Early summer	Vancouver Lake data Line transect Line transect Line transect Columbia River Bridge Gage

TABLE 2 (Continued)
 HABITAT SUITABILITY MODELS FOR THE FIVE FISH SPECIES SELECTED
 FOR COLUMBIA RIVER LOWLAND LAKES HABITAT EVALUATION

Species/ Life Requisite	Habitat Parameter	Season	Suggested Methodology
Black Crapple	Food	Growing season	Vancouver Lake data
	Cover	Mid-summer	Line transect
		Spring and summer	Line transect
Water Quality	Average turbidity	Summer	Vancouver Lake data
	Temperature	Summer	Vancouver Lake data
	Dissolved oxygen	Mid-summer	Vancouver Lake data
	pH	Yearly	Vancouver Lake data
Reproduction	Percent cover	Mid-summer	Line transect
	Percent littoral area	Spring and summer	Line transect
	Temperature	Early summer	Vancouver Lake data
	Dissolved oxygen	Early summer	Vancouver Lake data

JACK S. WAYLAND
Director



STATE OF WASHINGTON
DEPARTMENT OF GAME

600 North Capitol Way, G1-11 • Olympia, Washington 98504-0091 • (206) 753-5700

August 26, 1985

Mr. John Brueggeman
Envirosphere Company
400 112th Avenue N.E.
Bellevue, Washington 98003

Dear Jay:

This letter is to confirm the conversation with John Knutsen of your company concerning the aquatic HEP for the Port of Vancouver study. The Washington Department of Game concurs with the sampling methodologies and other HEP decisions outlined in Mr. Knutsen's letter of August 5, 1985.

Sincerely,

THE DEPARTMENT OF GAME

Brian D. Hauger
Westside Field Operations Coordinator
Habitat Management Division

BDH:cv
cc: USFWS

C-19



RECEIVED

AUG 30 1985

ENVIROSPHERE COMPANY



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services

2625 Parkmont Lane S.W., Bldg. B-3
Olympia, Washington 98502

August 21, 1985

Mr. John Brueggeman
Envirosphere Company
400 112th Avenue, N.E.
Bellevue, Washington 98503

Dear Mr. ^{Jay} Brueggeman:

Enclosed is the signed decision letter for the Cowlitz River Wildlife Studies.

I also wanted you to know I spoke with John Knutsen of your company concerning the aquatic HEP on Vancouver Lake. I have no problems with the species, habitat types, sampling methodologies, and other HEP decisions outlined in the letter.

I appreciate the opportunity to comment.

Sincerely,

Elaine N. Rybak
Fish and Wildlife Biologist

Enclosure

cc: WDG (Hauger)

RECEIVED

AUG 26 1985

ENVIROSPHERE COMPANY
11 4771 E