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(Seattle, Wash.)

Apr 30th, 10:30 AM - 12:00 PM

Developing Human Wellbeing Indicators in the Hood Canal Watershed

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Developing Human Wellbeing Indicators for Hood Canal

Salish Sea Ecosystem Conference
April 2014

Kelly Biedenweg, PhD

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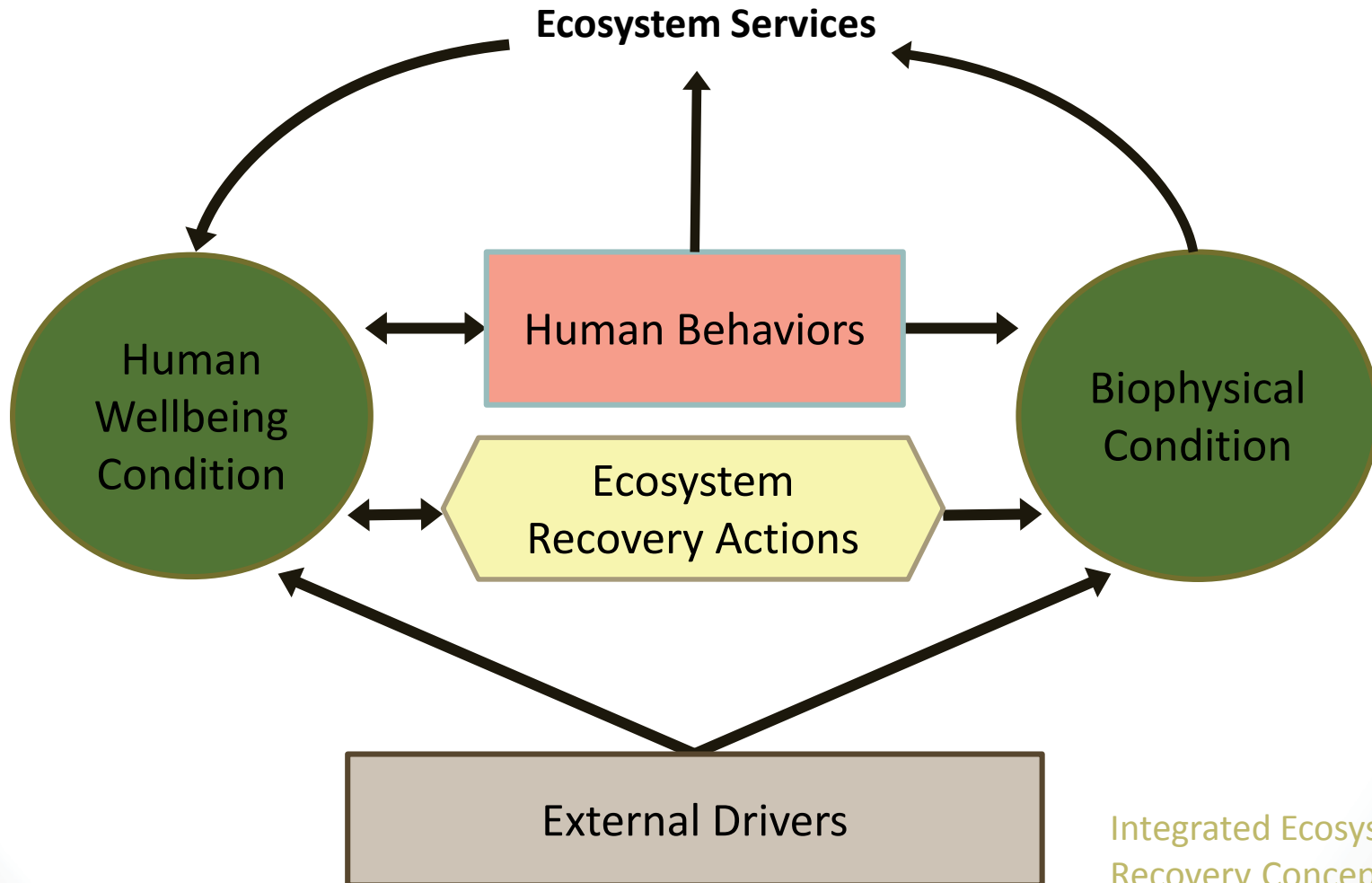
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Kara Nelson, M.S.

Kara Nelson Consulting

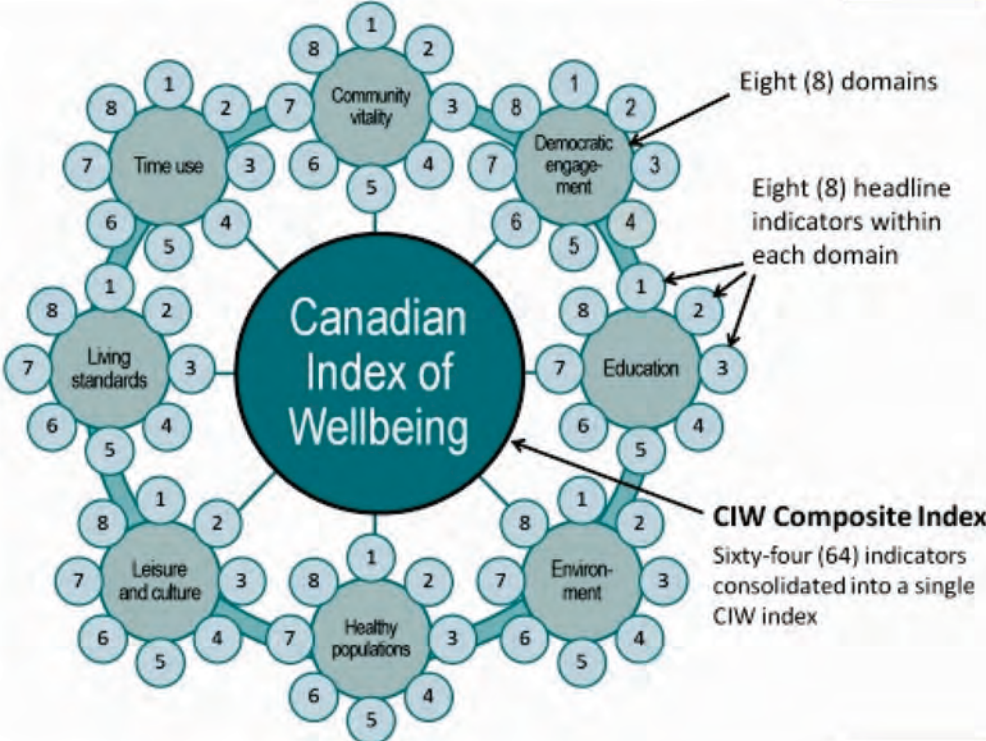
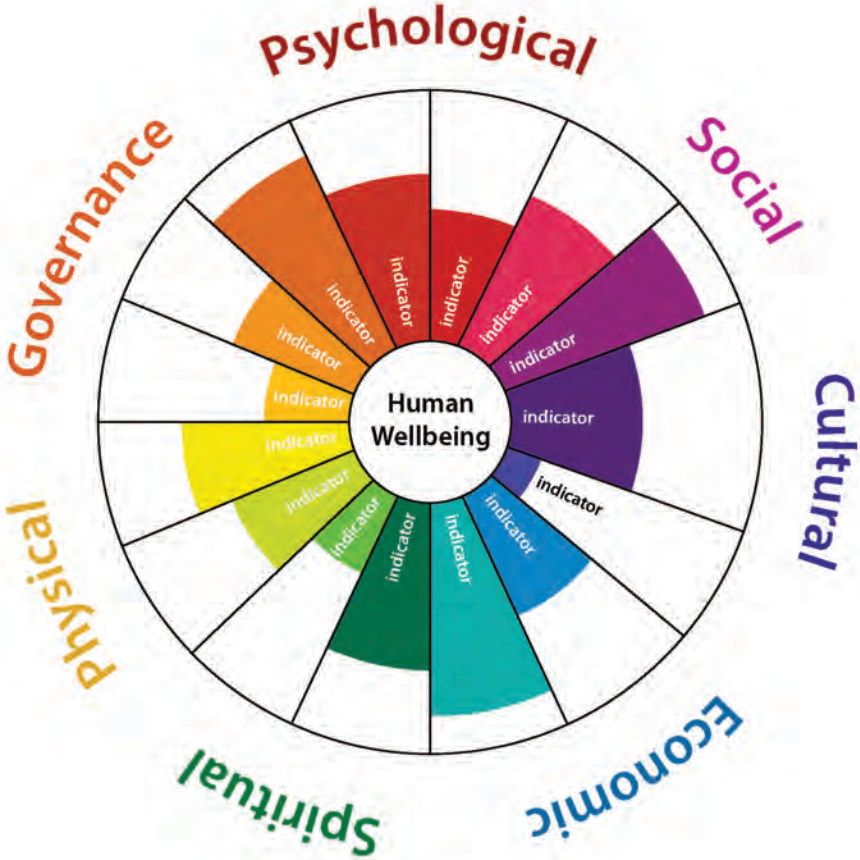


Why do we care about human wellbeing?



Integrated Ecosystem
Recovery Conceptual
Model – Puget Sound
Partnership draft

Developing Human Wellbeing Domains



The Hood Canal HWB Indicator Development Process...

4 steps

I. Literature Review and Stakeholder Interviews

Well-Being Indicators in the Puget Sound Basin

A summary and categorization of types of social indicators and metrics used by government and non-government agencies in the Puget Sound Basin

October 2012

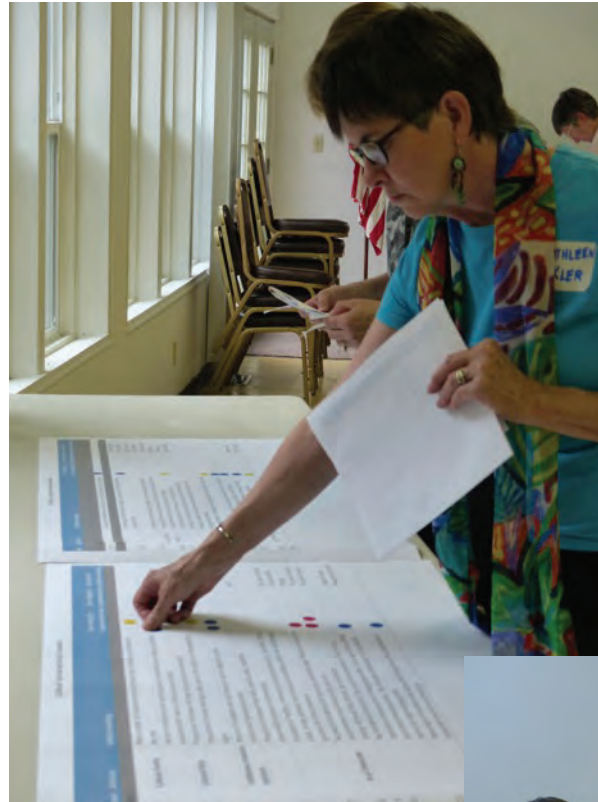
Adi Hanein, UW School of Marine and Environmental Affairs
Dr. Kelly Biedenweg, Stanford University and Puget Sound Institute



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II. Community Workshops

Relevance and Completeness/Importance



III. Social Science Review

Robustness, Practicality, Importance

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
Domain	Attribute	Indicator <i>(To incorporate social justice issues, all indicators can be disaggregated based on demographics)</i>	Robustness: How well does this	Robustness: How	Robustness: ess:	Robustness: ess:	Robustness: s:	Robustness: s:		Practicality: How feasible would it be to	Practicality:	Practicality: call	Practicality: all	Practicality: ity:	Practicality: How		Importance: How necessary is	Importance: e:	Importance: orta	Importance: orta	Importance: orta
Physical	Exercise	Percent of residents who engage in outdoor activities (divided into swimming, hiking, walking, running,	3	5	3	5	3	4	3.83	5	5	4	4	5	4	4.6	5	5	3	2	Is the
	Access to Local Food	Availability of commonly harvested species (e.g. hardshell clams, crabs, shrimp, salmon, deer, elk), year-round add non-aquatic species (plants, mushrooms, rose hips, willow, cedar); remove year round	5	5	4	5	3	5	4.5	5	4	5		5	4	4.6	5	5	5	3	
	Access to Local Food	Consumption of commonly harvested species (e.g. hardshell clams, crabs, shrimp, salmon, deer, elk), year-round Need to measure this with prior, if measure need	4	5	3		3	1	3.2	5	5	4		5	2	4.2	5	5	4	2	
	Safe Food and Drinking Water	Drinking water testing results from Community Groups and wells	4	4	5		3		4	5	4	4		5		4.5	5	4	3	4	
	Safe Food and Drinking Water	Toxin levels in shellfish harvest areas, commercial and recreational: PSP, crypto, giardiasis, vibriosis, notovirus Can we measure poisonous more directly?	5	4	3		3	4	3.8	5	4	5		5	5	4.8	5	5	5	3	
	Air Quality	Number of days during the calendar year that air quality was good, moderate, unhealthful, very unhealthful, or hazardous (must include pollutants from smoke) Can combine this with asthma rates?	4	5	4		5	5	4.6	5	4	4		5	5	4.6	5	5	4	4	
	Shelter	Availability of natural resources to build homes (<i>no definitive wording yet</i>) Not relevant - more important is % people who believe it is an affordable place to live	2	2	1	1	1	1	1.33	2		1		5	1	2.25		2	1	1	
	Shelter	Number of reports of mold in households per year	2	5	1	1	3	3	2.5	5		2		?	4	3.67		5	2	4	
Psychological	Positive emotions	Percent of residents who regularly experience positive feelings/emotions from Hood Canal, such as awe, inspiration, fulfillment, appreciation Feelings might be different between Hood Canal and other areas	5	5	4		5	4	4.6	5	4	4		5	4	4.4	5	5	4	4	

26 recommended indicators

Domain	Attribute	Indicator
Physical	Exercise	Approximate number of hours residents engage in outdoor activities (divided into work that involves outdoor physical activity, swimming, hiking, walking, running, mountain biking, human-powered watercraft, skiing, scuba, home care (garden, yard), & other motorcraft) per week
	Exercise	Percent of swimming beaches that meet safe swimming standards at all times during the summer
	Access to Local Food	Availability of commonly harvested species (e.g. hardshell clams, crabs, shrimp, salmon, deer, elk, mushrooms, rose hips, willow, cedar, other plants or animals)
	Safe Drinking Water	Drinking water testing results from Community Groups and wells
	Safe Food	Toxin levels in shellfish harvest areas, commercial and recreational: PSP, crypto, giardiasis, vibriosis, norovirus
	Air Quality	Number of days during the calendar year that air quality was good, moderate, unhealthful, very unhealthful, or hazardous (must include pollutants from smoke)
Psychological	Positive emotions	Percent of residents who describe experiencing positive feelings/emotions from being in nature in Hood Canal, such as awe, inspiration, fulfillment, appreciation, solitude, relaxation, sense of peace and reflection
	General subjective wellbeing	Percent of residents who express high life satisfaction or happiness and percent who express living in Hood Canal as a contributor to this
	Place Identity	Percent of residents who express a positive connection to the region
Governance	Access	Percent of shoreline that is publicly accessible or owned
	Access	Percent of residents who are satisfied with their access to public shorelines
	Communication	Percent of Hood Canal residents who have learned about resource management or recreation issues through different media this year: newspaper, radio, website, printed media, app, educational resources for school aged children, word of mouth; include source
	Trust in government	Number of Hood Canal residents who report trust in experts and local and state government and collaborative government efforts
	Effectiveness of Public Policies	Percent of identified PIC failures with corrective action initiated within 2 weeks
	Stewardship	Percent of participants engaging in a natural resource stewardship activity/year
Cultural	Cultural Events	Percent of residents who participate in natural-resource inspired cultural activities
	Traditional resource practices	Proportion of residents who say that they would like to regularly access traditionally/commonly harvested natural resources and are able to do so as much as needed
	Rural Character	Distribution and quantity of urban, rural, agriculture, forest, mineral resource, conservation and stewardship lands.
Social	Trust	Percentage of residents who trust people in their surrounding community
	Strong Families and Friendships	Average number of days/year participate in outdoor activities with family members and/or friends
	Strong Communities	Percent of residents who have worked with other residents to manage resources, prepare cultural events, solve community challenges, or share harvested goods in the past year
Economic	Jobs	Number of jobs and living wages per worker by resource-based employment/industry categories and economic clusters by county, and unemployment rates at subarea level matching state database
	Jobs	Number of new jobs created by natural resource employment sector/year
	Industry	Percent of economic activity that is from natural resource-based small business
	Industry	Percent of revenue to local economy from agriculture, commercial shellfish, commercial fishing, timber, non-timber products and tourism
	Industry	Number of local supporting businesses to industry, by natural resource

IV. Selection for Monitoring

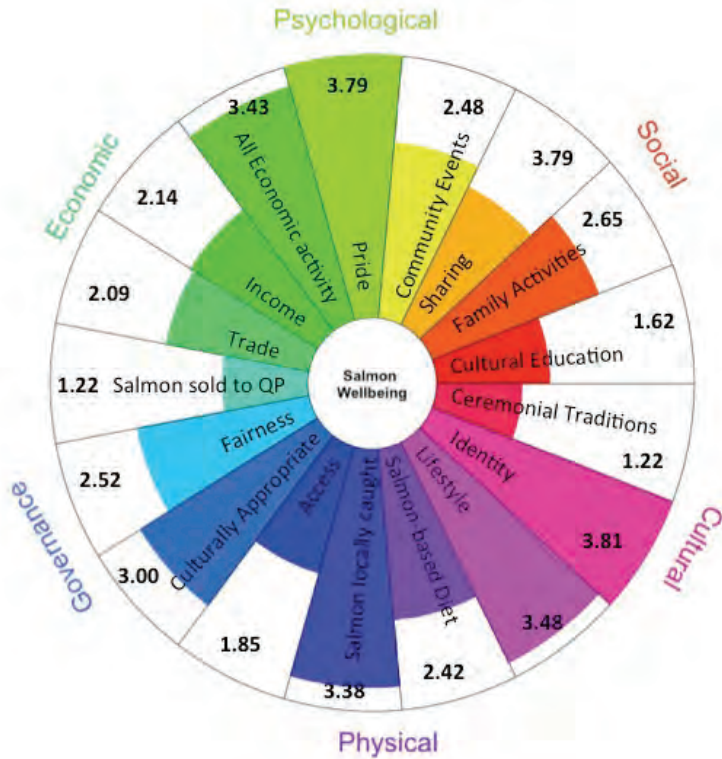
Practicality, Importance, Represent diverse domains

Domain	Attribute	Indicator
Physical	Access to local food	Availability of commonly harvested species
Psychological	Positive emotions	Percent of residents who describe feeling positive feelings from being in nature
Governance	Communication	Percent of residents who have learned about resource management by different sources
Cultural	Traditional resource practices	Proportion of residents who would like to access local resources and are able to
Social	Strong Communities	Percent of residents who have worked with other residents to manage resources, prepare events, etc.
Economic	Industry	Percent of economic activity from natural resource based industries

Where's the data?

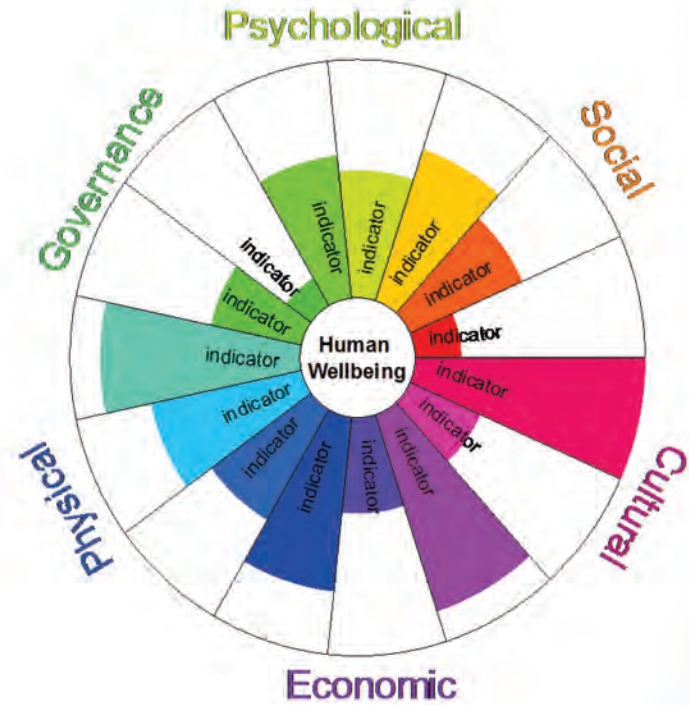
- NSF and PSI-sponsored testing of subjective indicators
- Various sources for data from county, state, national agencies *that would need to be processed to Puget Sound scale*
 - CDC's Behavioral Risk Factor Surveillance System
 - Bureau of Economic Statistics
 - WA State department of health

If we monitor these....



Year 1

or... Tribal Residents
or... Women under 30



Year 2

or... Non-tribal residents
or... Men over 60

Acknowledgements

- NSF grant #1215886
- Workshop facilitators from UW, Puget Sound Institute and Puget Sound Partnership
- Hood Canal Coordinating Council staff
- Hood Canal residents

For more information:

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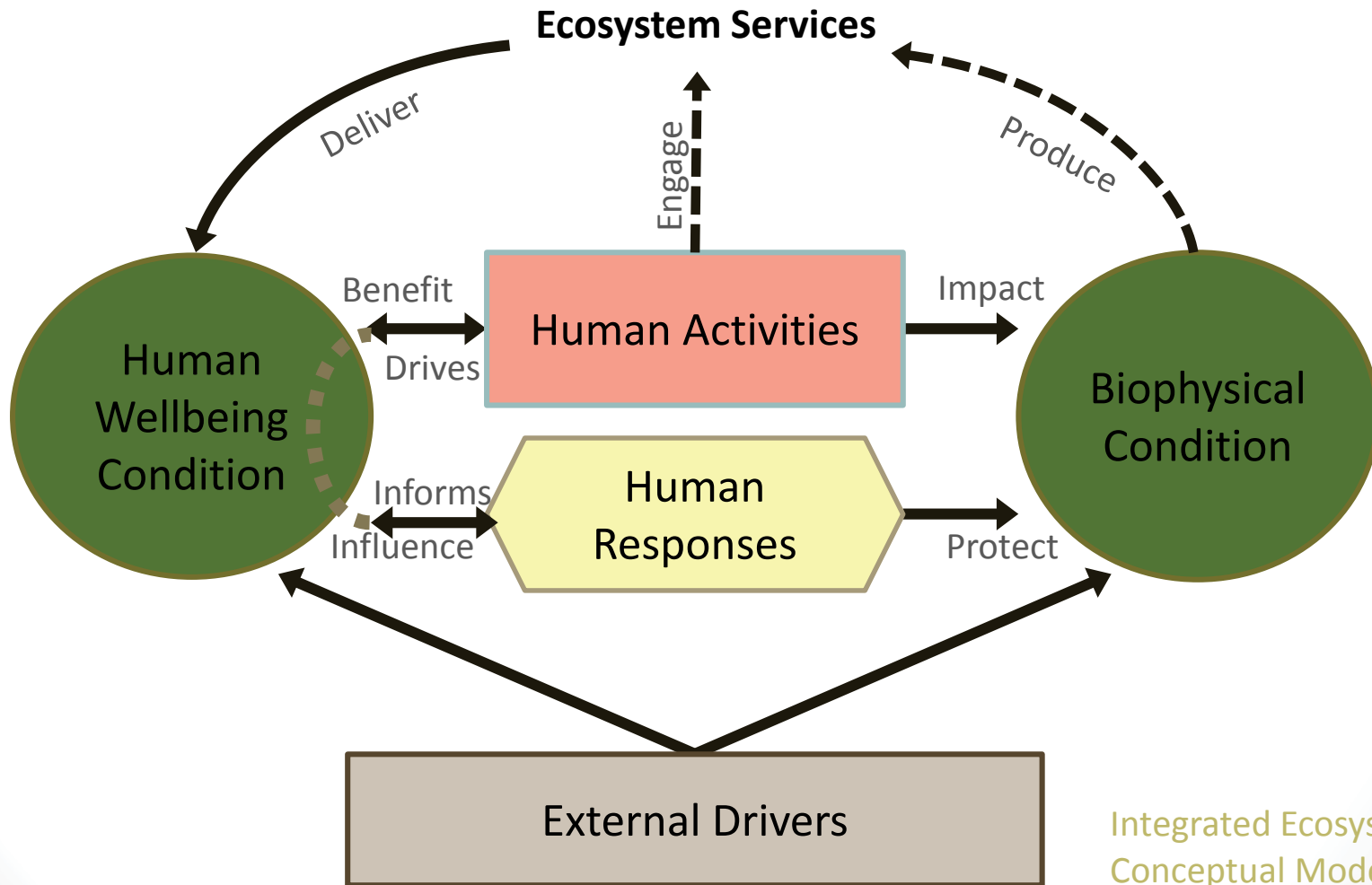
kbied@uw.edu kshaber@hotmail.com

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Next Steps for Puget Sound Scale

- Same process being conducted in Puyallup, potentially Whatcom - to be completed by June
- Basin-wide workshop to identify recommended indicators – Summer/Fall
- Develop a home within PSP for indicators and monitoring
- Identify synergies between wellbeing indicators and ecological indicators to inform strategies

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Conceptual Model –
Puget Sound Partnership
draft