

Literature Review - Relevant Studies, Research and Case Studies to Inform Survey and Stakeholder/Property Owner Interviews							
Title	Source	Description	Behaviors addressed/Purpose of Initiative	Barriers relevant to Armoring Behaviors	Motivations (or stated desired incentives) relevant to Armoring Project Behaviors	Key Insights	Notes
Sound Behavior Index - 2012 Survey Report	Puget Sound Partnership (PRR)	Random sample phone survey, 3,621 respondents	Demographics of Sound residents more likely to score high or low on SBI (behaviors related to Puget Sound health - yard and garden care, pesticide use, pet waste, boating, etc.)	n/a	n/a	Established, well-to-do, white families with children may encounter greater opportunities to perform imperfectly as regards to Sound Behavior. More likely to have lawns, horses, boats, dogs, and engage in boating or other activities that produce behaviors adverse to water quality. Less resourced families were measured as performing relatively better than families with a wider range of opportunities.	
Social Capital Index - 2012 Survey Report	Puget Sound Partnership (PRR)	Random sample phone survey, 3,621 respondents	Demographics of Sound residents more likely to score high or low on SCI (behaviors related to measures of community connectedness - social networks and other community connections)	n/a	n/a	On Page 20 (Table 2), certain deomographic characteristics by county were related to higher SCI scores	
General Public Opinion Survey	Puget Sound Partnership (PRR)	Random sample phone survey, 2,003 respondents	Measured PS residents attitudes and knowledge about health and condition of PS. Also measured knowledge of PS waters and endangered species, valued natural resources and activities, and place attachment/identification w/ NW Washington	Perception that Puget Sound health is not urgent	Preserving natural scenery and beauty Desire to help clean up Puget Sound Identification with the land/water as part of personal identity	Overall, most think health and condition of PS waters is good or excellent (and expect it to remain about the same over the next 5 years) Most think the need to clean up and protect waters in/around PS is urgent Most agree that one person's actions can make a difference in improving condition of PS/wildlife Most are aware of activities that are harmful to water quality Many value natural scenery - top reason people value natural resources in PS region is beauty Most feel attached to NW WA, feel it is a part of them - value walking or hiking, gardening, reading and outdoor activities in their free time Most see themselves as a person who does something to protect the environment Market Segments: Puget Sound Champions (50%), Ready & Willing to do their part: 55% female skew; 85% 18-54; least likely to have lived in PS more than 6 yrs; most likely (95%) to live less than 5 mi from water; voters; 81% liberal or moderate Non-Persuadables (11%), PS in good health, cleanup not urgent, it's going to get better, don't know what's harmful to WQ and don't do much to protect environment: 68% male, older, most likely to have lived in PS more than 6 yrs, most likely to live more than 5 mi from water; voters; conservative Persuadables (39%), PS in relatively good health, cleanup somewhat urgent, it's going to get better, know some things are harmful to WC and do some things to protect environment: 59% male skew, most likely 18-34 (38%); more likely lived in PS 6 or more yars (77%); more likely to live 5 or less miles from water (93%); less likely voters; 35% conservative/41% moderate/24% liberal	
Yard Care & Pesticide Practices Survey: Barriers & Motivators, 11/13	Puget Sound Partnership (PRR)	Random sample phone survey, 2,000 respondents	Assess residents' knowledge and use of different yard care practices (both conventional and natural). In addition, ID barriers and motivators regarding pesticide use practices and, to test various statements to assess their resonance with different audiences.	Perception of not fitting in with neighbors/neighborhood	Concern for environment Safety of family members and pets/animals	Many say they have knowledge about how to practice natural yard care, how to choose plants for site conditions, and how to control pests and diseases with pesticides, but few have knowledge about soil health or how to control pests and diseases without pesticides. The top two features that respondents look for in yard care products are environmental safety and effectiveness of the product. Many use compost and other natural soil amendments, as well as chemical or organic fertilizer. Most seek advice or information before purchasing or using yard care products. The majority of respondents are likely to look for the words danger/poison, warning or caution prior to purchasing a yard care product and the presence of these words on the label affects their decision to buy and how to apply the product. Many think that it is important to keep their lawn green and weed free. They think this is important because they want it to look good to themselves and their neighborhood, as well as to have a healthy lawn (prevent the weeds from taking over). Most respondents have concerns about using pesticides. They are mainly concerned about the environmental impacts, their pet's health or other animals health, water quality and their personal health and family's or other people's health. Broke respondents into market segments: Persuadables, Ready & Willings and Unwillings (detail in Exec Summary at link)	

Yard Care & Pesticide Use Focus Groups, 11/13	Puget Sound Partnership (PRR)	Focus Groups (4)	Follow up to Barriers & Motivations survey, to learn more about what barriers people perceive to using safer yard care products and practices as well as what would motivate them to do so.Targeted 'Persuadables' market segment	Wanting yard/lawn to look good is priority Lack of time Lack of money Perception that organic/natural methods are slow, expensive Not knowing about alternatives Health/enviro effects not noticable to homeowner	concern for environment Safety of family members and pets/animals Avoidance of poison going to waterways/drinking water Knowing alternatives are just as effective Knowing where to find good information Visual tools/scale to help gauge effectiveness/safety Financial incentives/discounts/deals Knowing institutions/ gov'ts have taken action Consumer/peer reviews to learn from Phone app w/ info an guidance POP information (posters, etc.)	Unattractive Motivators included: Yard Signs/Recognition (too much effort, bar set too high); wallet-sized cards/tools Trusted sources of info include: Master gardeners, nurseries and the experts who work there, gardening media figures (such as Ciscoe Morris, Marianne Binetti, Tim Hill), and family, friends and neighbors whose yards look good. Many were not confident in big box store sales associates or those who actually make the yard When presented with hypothetical "what if chemical products were banned in 3 months?" some said they would stockpile products but many others said they would be relieved that the pressure to have a perfect, green lawn would be gone "That would be great, because everybody will have a brown lawn."	
Targeted Outreach to Reduce Impacts from Shore Armor in the Port Susan Marine Stewardship Area - Island and Snohomish County Planner Needs Assessment and Workshop Summary Report, 11/13	Northwest Straits Foundation (Tracie Johannessen, EEOutcomes)	Online survey of Island & Snohomish County planners Survey : 17 respondents	Assess perceived armoring-related needs and perceived barriers for marine shore landowners	Perceived barriers for employing 'best management practices for erosion control (in order of how often menioned): Lack of knowledge of alternatives Lack of understanding of current regs Lack of knowledge of impacts of shoreline hardening Concern about property loss from erosion Concern about esthetics/property value Lack of professional resources Permitting process/cost Monetary concerns Barriers to removing existing structures: Permitting process/cost monetary concerns Lack of professional resources Barriers that limit planners' ability to enforce shoreline permitting regs: Lack of understanding about regs by landowners Cost or time for permits discourages obtaining one Lack of enforcement/penalties for non-permitted activities Lack of understanding of regs by planners Penalties not big enough to deter non-permitted activities	Consistent regulatory/policy application Permitting breaks for softer shore techniques Better information/education about: - shoreline permitting and regulations - slope stability and role of vegetation and drainage - misperceptions about erosion/damage - how hard armor often degrades the quality and accessibility of their beach Site visits and expert advice beyond what permit office can provide with available resources Training workshops FOR PLANNERS: - Case studies/photos/examples - Training, ie. Shoreline Permitting 101 - Training on shoreline code, implementation, enforcement - Expert resources to go to with questions	69% of respondents interface with the public by staffing the 'permit counter' Training: Planners reported various levels of training on topics related to armor permitting: Shoreline Management Regulations & Permitting Requirements (65% trained); coastal erosion causes and rates (35% trained); coastal processes/littoral drift (24% trained); coastal bluffs and landslides (24% trained); no training (29%) Familiarity with shoreline issues: Familiarity with characteristics of the Port Susan MSA shore relevant to permitting (47% somewhat, 18% very, 35% not at all); Familiar with impacts of hard shore armor (53% somewhat, 35% very, 12% not at all); Familiar with alternatives to hard shore armor (53% somewhat, 35% very, 12% not at all) Common questions/comments from landowners: Can I harden the shoreline to proted my beach; house; bluff; yard; gazebo; drainfield; stairway, etc.? Required setbacks and how to get around them How close can I build? How long does this process take? Why was my neighbor able to build there but I can't? How much concrete can I dump, how close to the water can they dump it, when can they start dumping it? who are you to make me ask before I start dumping concrete? What requires a permit and what doesn't? Is this project approvable? Slope/stability, drainage, view enhancement I don't wan't to risk damage to my own property in light of choices by my neighbors Common compaints about permitting process: Processing time, regulations, cost, inconsistent application of regulations (also a complaint of planners); too complicated and restrictive, county code too ambiguous, cost of permit and required studies, that permits are required by all, permitting staff just says what won't work - "yes, but"	
Powell Shoreline Design Restoration Report	CGS	Case study/report	Report of design process to restore Powel property on Port Madison/Bainbridge Island	Fear of flooding Loss of views <u>Protect existng structures</u>	Improve habitat	Powel family approached Bainbridge Island Land Trust to help restore shoreline on large family property (property has an easement). CGS was design consultant to help lead the project	
Green Shorelines for Lake Washington and Sammamish - coordination & communication workshops, 2009	Cities of Seattle, ORA, WRIA 8	Landowner workshops	Perceived barriers and incentives related to practicing Green Shorelines Behaviors	In order of % who agree (roughly): Permitting process (80%) Cost (70%) Ineffective erosion control (60%) Ineffective wake protection (60%) Ineffective wave protection (60%) Time (55%) Maintenance cost (50%) Decreased property value (40%)	Perceived incentives, in order of % who agree (roughly): Tax incentives (80%) Matching funds (77%) Streamlined permitting (75%) Clear requirements (75%) Faster permitting (75%) Property value increase (60%) Example project (58%) Sense of stewardship (58%)	Green Shorelines Behaviors described as: Reducing bank hardening, Restoring overhanging riparian vegetation, Replacing bulkheads and rip-rap with sandy beaches with gentle slopes, and Using grated dock surfaces or community docks. Survey question - "Have you modified your shoreline in the last 10 years?" - 63% no, 27% yes, 10% considered. 42% who attempted or considered modification did not consider natural stabilization alternatives. Public recognition was the incentive with the LEAST amount of 'strongly agree/agree' responses (~10%, with almost 30% strongly DiSagreeing). Other lower scorers included Sense of Belonging (35%), neighbors 'doing it' (20%), Prestige of Design (19%)	

Clallam County Shoreline Master Program (SMP) Update Summary of Focus Group Meetings, 1/11	Clallam County	5 Focus groups (130 participants): East end shoreline property owners; met in Sequim; West end shoreline property owners; met in Sekiu; Central county shoreline property owners; met in Port Angeles; Water-related business owners; met in Port Angeles; Recreational shoreline users; met in Port Angeles	Hear what people in Clallam County think about shorelines and shoreline management, to help inform the design of the SMP update process.	Don't know the rules Perception that people who 'follow the rules' are punished, while those who don't are rewarded Cost of complying with shoreline regs is a burden (need consultants/experts, etc.)	Majority of people "want to do the right thing"	Property owners represented a variety of shoreline types including freshwater lakes, streams and marine areas. Participants at the focus group meetings were asked two general questions: - Do you think things are improving or going in the wrong direction in Clallam County in regard to protecting the shorelines, providing public access, and protecting the rights of the use of private property owners along rivers, creeks, lakes, and saltwater shorelines? - What would inspire you to participate in Clallam County's effort to protect the ecology of the shoreline, provide public access, support water dependent uses and protect private use of land? Strong feedback that new regulations was not needed/would be burdensome on property owners, but better enforcement of existing regs is preferred.	
Dept. of Ecology Green Shorelines Workshop, 2009	WA Dept. of Ecology	Survey of South Lk. Wash lakeshore property owners, 2007	Workshop presentation that includes results of landowner survey, also referenced in Green Shorelines workshop recap in line 10	Top two barriers: permitting process, costs Concerns about whether or not techniques are effective Maintenance Loss of property value	Top Motivators for Green Shorelines 86% eligible for 30-50% property tax break 65% compatible with having dock 63% protect property from erosion 58% likely to increase property value 58% easy water access 51% less expensive permitting	40% of respondents said that they would be “very willing” to use a Green Shoreline design when in need of a bulkhead repair or replacement	
Green Shorelines for Lakes Washington & Sammamish - Summary Report, May 2010	Ecology, PSP, City of Seattle, NOAA, & partners	Summary report of all workshops referenced in line 10	Green Shorelines behaviors	Lack of education about green shorelines - what are they? Lack of understanding about what options are available for each different site/property Concern/fear of erosion Fear that if armor is removed, wont' be able to replace if erosion becomes a risk later on Cost	Workshop 3 (regulatory agency staff, non-regulatory agency staff, consultant, contractor, landowner): - Financial Incentives. - Tax breaks for property loss, installing green shorelines and conservation easements. - Grants from federal, state, and local governments and from foundations. - Permit exemptions to lower permit costs. - Technical assistance with design of projects, installation of projects and plantings, and permitting. - Permitting Process - Streamlined / consolidated /centralized permits, Multi-agency permit team for Lake Washington. - Education and outreach - Demo projects and case studies Workshop 4 (landowners): - Financial Incentives - Sales tax breaks for green shoreline projects - Property tax breaks such as the Public Benefit Rating System in King County - Permitting Process - Create consistent codes between jurisdictions - Create a shoreline restoration / mitigation bank - Education and Outreach - Provide more information on lake health, habitat, and fish	Comments from participants: Provide a suite of options people can do. If x situation, do this; if y situation, do this. Need to better define property types and conditions appropriate for green shorelines. The first step should be to build knowledge about what green shoreline techniques work with different property types. Tours completed green shoreline projects by boat. Also, useful to view examples by land.	Revisit during messaging phase

Lake WA Shoreline Permitting Process Study	UW Graduate Students, 2008	In-person interviews were conducted with 15 permit issuers (local, state, and federal agencies) and 11 permit applicants (private landowners, contractors, and consultants).	Assess perceptions and attitudes about shoreline permitting processes	Bottlenecks in the permitting process Lack of examples of "good" projects to refer to Lack of information about the process Perceived lack of resources/assistance available to applicants Loss of property when replacing bulkhead w/ beach Cost Strong belief that green shorelines are worse than bulkheads in preventing erosion	Permit streamlines (among different agencies) for green shorelines projects Shortcuts for green shorelines projects Helping environment/fish Aesthetic preference for green shoreline over traditional designs	Interviewers used "Alternative shorelines" terminology in interviews and noted the term was ambiguous and did not resonate with respondents. "Eco-friendly shorelines" was less so but still not clear. 20-33% of every agency group that a common mistake by landowners is having a blind trust in their contractors or consultants to take care of the shoreline design and permitting. Some interviewees at each level of agency believe that some contractors and consultants do not inform their clients of alternatives to replacing a bulkhead because they do not know how to design or implement an eco-friendly shoreline. Some of the contractors and contractors we interviewed stated that alternative shorelines are not desired by homeowners and that soft shorelines are not effective at controlling erosion and do not work on most sites. There is a lack of consensus on whether or not shortcuts or streamlines exist in the permitting process for Green Shorelines designs as well as a lack of communication between stakeholder groups about the shortcuts or streamlines that do exist. Shoreline residents identified 'professionals' as their primary source of alternative shoreline design information While a strong majority of the shoreline resident responses indicated that needing a permit is common knowledge, very few permit issuers and no contractors agreed. The only point of consensus among all stakeholder groups as to how people knew they needed a permit was that contractors are informers. Perhaps the biggest impediment to increasing the amount of soft shoreline on Lake Washington is the loss of property entailed in replacing a bulkhead with a beach. 33% of landowners said there were no benefits of alternative shorelines at all. when asked specifically about aesthetics as a possible benefit of alternative designs, 75% of landowners thought they were better than the traditional designs.	Revisit during messaging phase
Summary of Shoreline Landowner Workshop and Evaluation, 10/12	Northwest Straits Foundation	Workshop for 61 coastal landowners in the Port Susan Marine Stewardship Area (conducted by CGS); included classroom and beach walk 31 workshop evaluations received	Give shoreline landowners greater familiarity with coastal processes and critical habitats and a better understanding of the spectrum of shoreline land management practices, their impacts, effectiveness, longevity and cost over time.	n/a	n/a	Most common property concerns: Rate of erosion of bluff: 19 Rate of erosion of beach: 10 Health of Beach: 18 Integrity of protective structures: 10 Drainage Issues: 11 Interest in better stewardship practices: 20 The majority of evaluation responses indicated the most useful aspect of the workshop was in the area of shoreline management. A smaller though still significant number indicated they found the information on shore processes and the 'big picture' most useful. Additional responses were more general in nature describing the overall quality of the workshop. All responses were positive and 100% of respondents indicated they would use the information from the workshop to inform management of their property.	
Exploration of Shoreline Property Owner Knowledge and Awareness of Shoreline Management and Habitat Issues, 8/12	WSU Mason County Extension (Keller Consulting)	Fifteen people participated in one focus group and nine individual interviews.	The purpose of this research is to better understand shoreline homeowner knowledge, values, and concerns around water quality and shoreline habitat issues.	Perception that soft armoring is expensive and might not work Not willing to "live with" erosion that they believe devalues their property Lack of 'proof' that changing practices will make a difference	Being good stewards of the shore Receiving messages that are "specific, factual, and draw a clear connection between shoreline regulations and things people value."	Values as they relate to living on shorelines – Participants: - Have a strong emotional attachment to the waters where they live. They use phrases like “love,” “Shangri-la,” and “Good Lord how did I get here?” when describing how they feel about where they live - Believe that Mason County waters, with a few exceptions, are cleaner than other parts of Puget Sound - Believe that Mason County is a more affordable and desirable place to live on the water Participants identified inconsistencies in how shoreline rules are enforced, e.g. experts can’t agree on high water mark, geoduck seeding practices that “demolish” the beach, why concrete bulkheads are worse than concrete boat ramps that are publicly owned and operated Participants reacted negatively to blanket, general statements that are not supported by data. The phrase “Water quality in Puget Sound has been worsening over time” did not ring true to focus group participants who know that some bodies of water in Mason County are so clean they can "see 10 feet to the bottom." Phone Interview Questions start at p. 35 of Report - worth ARN checking out	Revisit during messaging phase

San Juan Initiative: Protecting our Place for Nature and People, 2008	San Juan Initiative - various partners, including PSP	Report of Initiative efforts: worked with local and regional scientists, policy makers and community members to understand the challenges facing our ecosystem. We held 18 public workshops and engaged land owners, real estate and construction industry professionals, and our science advisory team in intensive small group workshops.	Assess current ecosystem protection programs and recommend improvements. The group includes builders, real estate agents, marina owners, environmentalists, government officials and land owners.	The manner in which our laws are dministered is turning people away from “doing the right thing,” even when they may otherwise be willing and eager to do so. Current protection systems are often so confusing or inconsistent that they cause people to lose interest in protecting resources. Confusion about what is or is not allowed under the law Conflicting requirements both within and across programs Lack of enforcement. Perception that the system is arbitrary and unfair, so it's not worth participating Lack of technical assistance from public sources (advocacy group, primarily)	Value and connection to place Protecting the shoreline for all to enjoy	San Juan County residents want to protect the shoreline, but they need improved access to information. They need to know what is important to protect in their area and how they can be good stewards while enjoying their property. They need clear guidance and consistent interpretation of the regulations and permitting processes. They need voluntary programs to encourage good stewardship and easy access to technical assistance. Shoreline property owners need a clear process that is protective of the environment while allowing shoreline views and access to the shore. Governmental managers need clearer rules that they can consistently apply, and sufficient resources to apply them.	Revisit during messaging phase
Statewide Shoreline Education, Outreach and Stewardship Strategy - Shoreline Values Survey Summary, March 2011	Ecology's Shoreline Education, Outreach and Stewardship Strategy (SEOSS) planning team	Statewide online survey of 635 respondents	The survey asked individuals to identify words and phrases that would be meaningful to Washington residents and that would communicate the importance of all places “where land and water meet.”	n/a	n/a	Respondents were asked to rate several words, slogans, and phrases that describe shorelines and shoreline stewardship. The terms in order of preference used to describe areas “where land and water meet” are: 1. Beach 2. Shoreline 3. Bank 4. Coast 5. Shore 6. Water’s edge Our respondents generally enjoyed the natural qualities of shorelines and visited them frequently. The most popular activities were also related to a nature connection, whether just enjoying the beauty or walking/hiking. Over 85% of respondents “strongly agreed” that shorelines should be protected for habitat and future generations to enjoy.	Revisit during messaging phase