Social Marketing to Reduce Shoreline Armoring

Prepared for WA Department of Fish and Wildlife and WA State Department of Natural Resources

Puget Sound Marine & Nearshore Grant Program

April 24, 2014
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**Goal:** Create a social marketing behavior change strategy that will lead to residential landowners changing their shoreline armoring-related behaviors.

- Identify target audience for social marketing and behavior change strategies
- Identify behaviors to target
- Evaluate barriers and motivations for target audiences
- Develop strategies and creative solutions
- Create performance evaluation plan
Project Deliverables

- Puget Sound Shoreline Parcel Database
- Puget Sound Parcel Owner Characteristic Report
- Property Owner Interviews
- Influencer Interviews
- Literature Review
- Survey of Shoreline Property Owners
- Property Owner Focus Groups
- Influencer Online Survey
- Social Marketing Strategy Recommendation
- Messaging and Creative Concepts
- Social Marketing Planning How-to Guide
- Evaluation Approach
Today’s Agenda

Coastal Geologic Services: 9:05 – 9:20
- Database development
- Parcel and audience segmentation

Futurewise: 9:20 – 9:35
- Parcel owner characteristics
- Target parcels
- Literature review
- Landowner psychographics

Social Marketing Services: 9:45 – 9:50
- Target behaviors

ARN: 9:50 – 10:10
- Landowner survey
- Barriers/motivators and prioritization

Colehour + Cohen: 10:10 – 10:40
- Key decision points
- Research synthesis
- Shore Friendly campaign, messaging and toolkit

Social Marketing Services: 10:40 – 10:45
- Evaluation plan

Wrap up/Q&A 10:45 – 11:15
Puget Sound Shoreline Parcel Segmentation
Background

Andrea MacLennan, MS, Jonathan Waggoner, BS, Jim Johannessen, LEG, MS

For: Puget Sound Marine & Nearshore Grant Program

Presentation Overview

• Background
• Methods
• Results
• Recommendations
Objective: Better understand spatial patterns and characteristics of Puget Sound Parcels.

57% of Puget Sound is residential property.

Inform regional priorities for improved management, provide a valuable tool for outreach, management, restoration and social marketing efforts.
Background

Target Behaviors -

Primary behaviors

• Leave shore unarmored
• Remove all hard armor
• Remove a portion of hard armor
• Replace armor with soft-shore protection

Supporting behaviors

• Maintain native vegetation
• Plant native vegetation
• Reduce surface water runoff reaching bluffs
• Build with a generous setback
• Install soft-shore protection on unarmored property
• Move home further from the shoreline
• Obtain professional advice
## Parcel segments, shore characteristics, and behaviors

| Segment # | Shore Characteristics                                      | Leave shore unarmored | Remove all armor | Remove portion of armor | Replace armor with soft shore protection | Maintain Native Vegetation | Plant native vegetation | Reduce surface water drainage | Build with generous setback | Install soft armor on unarmored property | Move home | Obtain professional advice |
|-----------|-----------------------------------------------------------|-----------------------|-------------------|------------------------|------------------------------------------|---------------------------|-------------------------|-------------------------------|------------------------------------------|--------------------------|-----------------------------|
| 1         | No Armor, No Home, No Erosion Potential                   | X                     |                   |                        |                                          |                           |                         |                               |                                          |                          |                            |
| 2         | No Armor, No Home, Low-Moderate-High Erosion Potential    | X                     |                   |                        |                                          |                           |                         |                               |                                          |                          |                            |
| 3         | No Armor, Home present, No Erosion Potential              | X                     |                   |                        |                                          |                           |                         |                               |                                          |                          |                            |
| 4         | No Armor, Home present, Low-Moderate-High Erosion Potential | X                     |                   |                        |                                          |                           |                         |                               |                                          |                          |                            |
| 5         | Armor, No Home, No Erosion Potential                      | X                     |                   |                        |                                          |                           |                         |                               |                                          |                          |                            |
| 6         | Armor, No Home, Low-Moderate-High Erosion Potential      | X                     | X                 | X                      | X                                       |                           | X                       |                               | X                                         |                          |                            |
| 7         | Armor, Home Present, No Erosion Potential                 | X                     |                   |                        |                                          |                           |                         |                               |                                          |                          |                            |
| 8         | Armor, Home Present, Low-Moderate Erosion Potential      | X                     | X                 | X                      | X                                       |                           | X                       |                               | X                                         |                          |                            |
| 9         | Armor, Home Present, High Erosion Potential               | X                     |                   |                        |                                          |                           |                         |                               |                                          |                          |                            |
Methods

Perform data assessment to segment the target audience based on shoreline conditions

- Draft Washington State Parcel Database, UW
- Unit of Analysis: (Marine) Waterfront parcels
- Residential ONLY – not commercial, public
- Link with ecological and geomorphic data
- Assign parcels to segments and appropriate “target behaviors”
Methods

Source data

- Parcels: Draft 2012 Washington State Parcel Database, UW
  - Data compiled in 2009, updated 2012
  - Augmented with county assessor data (Mason, Jefferson)
- Wave exposure: Shorezone database (WDNR 2001)
- Shoretypes, Shore armor: CGS Feeder bluff mapping (MacLennnan et al. 2013)
- Shoretypes, Shore armor, Restoration strategies: PSNERP Change Analys (Simenstad et al. 2011)
- Forage fish spawning: WDFW
Methods

Pre-processing

- Compiled Shoretype Layer
  - Within drift cells: CGS Feeder bluff mapping (MacLennan et al. 2013)
  - Modified shores: where unknown by CGS used Change Analysis
  - No Appreciable Drift areas: incorporated pocket beaches in to bedrock areas

- Compiled Armor Layer
  - CGS armor from Feeder bluff mapping (MacLennan et al. 2013)
  - Change Analysis for NAD areas and Island County (Simenstad et al. 2011)
  - Friends of the San Juans (FOSJ 2010)

- Created Erosion Potential Layer (Shoretype + Exposure)

<table>
<thead>
<tr>
<th>Wave Energy</th>
<th>FBE</th>
<th>FB</th>
<th>TZ</th>
<th>AS/BAB</th>
<th>NAD-LE</th>
<th>PB</th>
<th>NAD-B</th>
</tr>
</thead>
</table>
Methods

Parcel boundaries extended waterward to link data
Methods

Data linkages performed

Parcels returned to original geometry

Parcel attributes populated and segments assigned

- Dominant shoretype, subdominant shoretype
- Erosion potential
- Documented forage fish spawning
- PSNERP strategy, Drift cell, percent armored feeder bluffs
- Armor P/A, Armor length
- House present
- Shoreline length
- Site and ownership address
- County
- Segment
## Results

General distribution of shoreline parcels Sound-wide

<table>
<thead>
<tr>
<th>County</th>
<th>Number of parcels</th>
<th>Shore length in mi</th>
<th>% of parcels Sound-wide</th>
<th>Min length in ft</th>
<th>Max length in ft</th>
<th>Mean length in ft</th>
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</thead>
<tbody>
<tr>
<td>Clallam</td>
<td>991</td>
<td>46.1</td>
<td>2%</td>
<td>16</td>
<td>4,863</td>
<td>245</td>
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<tr>
<td>Island</td>
<td>5,831</td>
<td>136.9</td>
<td>13%</td>
<td>5</td>
<td>3,918</td>
<td>124</td>
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<tr>
<td>Jefferson</td>
<td>3,313</td>
<td>119.1</td>
<td>7%</td>
<td>6</td>
<td>4,979</td>
<td>190</td>
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<tr>
<td>King</td>
<td>3,463</td>
<td>69.2</td>
<td>8%</td>
<td>1</td>
<td>5,076</td>
<td>106</td>
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<tr>
<td>Kitsap</td>
<td>7,806</td>
<td>201.0</td>
<td>17%</td>
<td>4</td>
<td>6,544</td>
<td>136</td>
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<tr>
<td>Mason</td>
<td>5,584</td>
<td>157.2</td>
<td>12%</td>
<td>0</td>
<td>11,764</td>
<td>149</td>
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<tr>
<td>Pierce</td>
<td>5,156</td>
<td>141.5</td>
<td>11%</td>
<td>4</td>
<td>9,053</td>
<td>145</td>
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<tr>
<td>San Juan</td>
<td>4,608</td>
<td>282.3</td>
<td>10%</td>
<td>6</td>
<td>33,476</td>
<td>323</td>
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<tr>
<td>Skagit</td>
<td>1,979</td>
<td>63.1</td>
<td>4%</td>
<td>2</td>
<td>5,828</td>
<td>168</td>
</tr>
<tr>
<td>Snohomish</td>
<td>1,675</td>
<td>36.5</td>
<td>4%</td>
<td>4</td>
<td>3,204</td>
<td>115</td>
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<tr>
<td>Thurston</td>
<td>2,663</td>
<td>82.1</td>
<td>6%</td>
<td>5</td>
<td>3,013</td>
<td>163</td>
</tr>
<tr>
<td>Whatcom</td>
<td>2,207</td>
<td>58.8</td>
<td>5%</td>
<td>4</td>
<td>4,810</td>
<td>141</td>
</tr>
<tr>
<td>Sound-wide</td>
<td>45,276</td>
<td>1,393.8</td>
<td>100%</td>
<td>0</td>
<td>33,476</td>
<td>163</td>
</tr>
</tbody>
</table>
Results

Armored and Unarmored parcels

• 48% of all parcels were mapped as armored = 29% of shore length
• King, Kitsap, Pierce, Snohomish, Mason and Thurston Counties >50% armored
• Most unarmored parcels in Clallam, Island, Jefferson, San Juan and Whatcom Counties
Results

Armor, Shoreline length & Shoretypes

• Smaller parcels (<1 acre) are 50% more likely to be armored than parcels greater than 1 acre
• Parcels with armor are typically 80% or more armored
• Transport zones (60%) are more armored than any other shoretype
• <40% of parcels with Feeder bluffs and Accretion Shoreforms are armored
Results

Forage fish spawning

• 26% of shoreline parcels, 58% of which are armored

• >50% of the parcels with forage fish spawn are armored in all counties but Clallam, Jefferson, San Juan and Whatcom Counties

• Thurston, Mason, Kitsap, and Island Counties have the most armored forage fish spawning habitat by length
Results

Forage fish & feeder bluffs

- 2,006 parcels with armored feeder bluffs with forage fish spawning
  - 38 miles
  - Kitsap (461 parcels, 8.3 miles)
  - Mason Counties (439, 8 miles)
  - Thurston (333, 6.7 miles)
## Results

### Segment population distribution

<table>
<thead>
<tr>
<th>Segment number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
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<tbody>
<tr>
<td>Armor Status</td>
<td></td>
<td>No Armor</td>
<td></td>
<td></td>
<td>No Home</td>
<td></td>
<td>Armor</td>
<td></td>
<td></td>
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<td>Home</td>
<td>No Home</td>
<td>Home</td>
<td>No Home</td>
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<td>No Home</td>
<td>Home</td>
<td>No Home</td>
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<td>No Home</td>
</tr>
<tr>
<td>Erosion potential</td>
<td>None</td>
<td>Low - High</td>
<td>None</td>
<td>Low - High</td>
<td>None</td>
<td>Low - High</td>
<td>None</td>
<td>Low-Mod</td>
<td>High</td>
</tr>
<tr>
<td>Clallam</td>
<td>3%</td>
<td>5%</td>
<td>1%</td>
<td>3%</td>
<td>1%</td>
<td>2%</td>
<td>0%</td>
<td>1%</td>
<td>7%</td>
</tr>
<tr>
<td>Island</td>
<td>3%</td>
<td>14%</td>
<td>2%</td>
<td>22%</td>
<td>3%</td>
<td>10%</td>
<td>2%</td>
<td>10%</td>
<td>9%</td>
</tr>
<tr>
<td>Jefferson</td>
<td>12%</td>
<td>16%</td>
<td>7%</td>
<td>9%</td>
<td>17%</td>
<td>6%</td>
<td>6%</td>
<td>4%</td>
<td>7%</td>
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<tr>
<td>King</td>
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<td>0%</td>
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<td>16%</td>
<td>2%</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>Kitsap</td>
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<td>14%</td>
<td>9%</td>
<td>14%</td>
<td>38%</td>
<td>17%</td>
<td>45%</td>
<td>20%</td>
<td>3%</td>
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<tr>
<td>Mason</td>
<td>13%</td>
<td>15%</td>
<td>6%</td>
<td>9%</td>
<td>10%</td>
<td>16%</td>
<td>8%</td>
<td>16%</td>
<td>2%</td>
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<tr>
<td>Pierce</td>
<td>12%</td>
<td>9%</td>
<td>7%</td>
<td>6%</td>
<td>11%</td>
<td>15%</td>
<td>19%</td>
<td>16%</td>
<td>6%</td>
</tr>
<tr>
<td>San Juan</td>
<td>23%</td>
<td>4%</td>
<td>50%</td>
<td>12%</td>
<td>2%</td>
<td>1%</td>
<td>2%</td>
<td>2%</td>
<td>7%</td>
</tr>
<tr>
<td>Skagit</td>
<td>1%</td>
<td>1%</td>
<td>5%</td>
<td>6%</td>
<td>1%</td>
<td>1%</td>
<td>5%</td>
<td>4%</td>
<td>28%</td>
</tr>
<tr>
<td>Snohomish</td>
<td>3%</td>
<td>4%</td>
<td>1%</td>
<td>2%</td>
<td>4%</td>
<td>7%</td>
<td>2%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Thurston</td>
<td>10%</td>
<td>3%</td>
<td>6%</td>
<td>3%</td>
<td>7%</td>
<td>7%</td>
<td>7%</td>
<td>8%</td>
<td>0%</td>
</tr>
<tr>
<td>Whatcom</td>
<td>8%</td>
<td>8%</td>
<td>5%</td>
<td>9%</td>
<td>5%</td>
<td>2%</td>
<td>2%</td>
<td>1%</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Sound-wide</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Data Limitations

Source data errors are carried forward

Parcel error

• Accuracy varies by jurisdiction
• Parcel geometry precision
• Ownership data (reflects 2009 most areas)

Spatial error

• Euclidian allocation method – minor error
• Armor – minimum mapping unit 20ft, age of original armor data (1999-2013)
• Forage fish spawn data – false negatives

Opportunities to refine

• New armor data (data set accuracy varies greatly)
• Interim parcel tool for linking with updated data
• New home construction, new ownership data
• Corrected/cleaned owner address data
Recommendations

• 48% of residential parcels are armored
• Most are entirely armored or unarmored
  ▪ Partial armor removal may be feasible at many parcels
• Transport zones are most commonly armored
• 58% of the forage fish spawning areas (on residential property) is armored
  ▪ Armor removal and/or replacement with soft-shore should be a priority
• ~6,000 parcels with armored feeder bluffs
  ▪ 2,000 also include forage fish spawning
    ◦ 843 parcels (across 32 miles) do not have a home present
• Value and utility of the database can improve with updates/polish
Parcel Owner Characteristics

April 24, 2014
Methodology

- Literature Review (C+C)
  - Current and past research
  - Case studies
  - Public opinion polling

- Parcel owner characteristics
  (Futurewise)
  - 2012 Washington State parcel database
  - WA Statewide Voter Registration Database
Literature Review Highlights

- Have a strong emotional attachment to the waters where they live.
- Most want to “do the right thing”
- Strong interest in financial incentives
- Permitting issues (hassle factor, cost, time)
- Concerns about
  - Erosion
  - Health of beach
  - Drainage issues
1/5 of parcels are held in legal structures (trusts, living estates)

Percentage of parcels held in trusts

<table>
<thead>
<tr>
<th>County</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clallam</td>
<td>30.4%</td>
</tr>
<tr>
<td>Island</td>
<td>20.4%</td>
</tr>
<tr>
<td>Jefferson</td>
<td>25.5%</td>
</tr>
<tr>
<td>King</td>
<td>7.3%</td>
</tr>
<tr>
<td>Kitsap</td>
<td>17.3%</td>
</tr>
<tr>
<td>Mason</td>
<td>37.5%</td>
</tr>
<tr>
<td>Pierce</td>
<td>20.4%</td>
</tr>
<tr>
<td>San Juan</td>
<td>37.5%</td>
</tr>
<tr>
<td>Skagit</td>
<td>10.0%</td>
</tr>
<tr>
<td>Snohomish</td>
<td>20.4%</td>
</tr>
<tr>
<td>Thurston</td>
<td>10.0%</td>
</tr>
<tr>
<td>Whatcom</td>
<td>20.4%</td>
</tr>
<tr>
<td>Total</td>
<td>37.5%</td>
</tr>
</tbody>
</table>

n=43,630
About 46% of the parcels with homes are owner occupied.
39% of parcels are owned by persons living outside of the county

Percentage of parcels owned out of county

n=43,630
Highest numbers of out-of-county owners: Seattle, E King Co., Tacoma

Seattle=8.9% of ALL shoreline parcels

- Bellevue/Medina/Clyde Hill/Yarrow Point
- Issaquah/Kirkland/Redmond/Sammamish/Mer...
- Seattle
- Tacoma/Gig Harbor/Lakewood/University...

n=13,137
Seattle & E King Co: highest ownership in Island and San Juan (outside of King Co)

Where Seattle and East King County residents own homes

$n=6.338$
9% of parcels are owned by persons living outside of state/US

Percentage parcels owned by out of state owners

Clallam: 18%
Island: 7%
Jefferson: 5%
King: 6%
Kitsap: 7%
Mason: 8%
Pierce: 6%
San Juan: 17%
Skagit: 6%
Snohomish: 4%
Thurston: 3%
Whatcom: 23%
Total: 9%

n=4,039
Out of state owners: California #1

Out of state owners: top locations

n=2,500
Canadian owners

Parcels owned by Canadian owners

Canada-Alb
Canada-BC
Canada-Ont
Canada-Yuk

Whatcom = 316

$n=319$
Other international owners

- Australia
- China
- France
- Germany
- Guam
- Hong Kong
- Italy
- Japan
- Jordan
- Korea
- Netherlands
- New Zealand
- Norway
- Philippines
- Russia
- Spain
- Switzerland
- Thailand
- UK
Shoreline property owners are seniors

Age of owners

n=23,551
Shoreline property owners oldest: Skagit and Clallam

60-69 and 70-79 year old shoreline parcel owners

n=12,839
Youngest owners (<60 years old)

Owner occupied parcels

Parcel owner age distribution by parcel county

n=12,839

Parcels owner age distribution by parcel county

n=12,839
Shoreline property owners are highly active voters

Shoreline parcel owner total n= 25,335; King County total n= 1,036,635; WA State total n= 3,778,206

Voting activity of currently registered voters

<table>
<thead>
<tr>
<th></th>
<th>Shoreline Property Owners</th>
<th>King Co</th>
<th>WA State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most recent vote</td>
<td>96.2%</td>
<td>81.6%</td>
<td>79.7%</td>
</tr>
<tr>
<td></td>
<td>45.8%</td>
<td>49.4%</td>
<td>51.1%</td>
</tr>
<tr>
<td></td>
<td>50.4%</td>
<td>32.2%</td>
<td>28.6%</td>
</tr>
</tbody>
</table>

Most recent vote: 2012 general

Most recent vote: 2013 non-general
Out-of-county owners have lived in their counties longer than those who live in county or at parcel

Out of county owners n = 8,190; in-county owners n= 4,881; owners who live at their property n = 14,684
Value (land and improvements) of most parcels: $100,000-$700,000

Market value of improvements and land (total value)

n=43,437
Value (land and improvements) of most parcels: Mason County

Market value of improvements and land (total value)
Value (land and improvements) of most parcels: **San Juan County**

48% of properties valued over $700,000

Market value of improvements and land (total value)
Smaller parcels (w/homes) are more likely to have armor than larger ones.

Comparison of homes and armor with parcel size

- Armor
- No armor

Parcel size (acres, from tax assessor data):
- ≤0.5
- >0.5 - 1.0
- >1.0 - 1.5
- >1.5 - 2.0
- >2.0 - 2.5
- >2.5 - 3.0
- >3.0 - 3.5
- >3.5

n (all parcels) = 33,152
Smaller parcels (w/homes) are more likely to have armor than larger

Comparison of homes and armor with parcel size

n=33,152
In sum, large numbers of parcels are...

- Owned in legal structure of some nature
- Owner occupied (46%)
- Of those owned out of county:
  - Highest: Seattle, E. King County and Tacoma area
  - In the range of total value $100-$700k (land and structure)
  - If have home, more likely to have armor if ≤ 1 acre
- Owners are:
  - Older
  - Are active voters
  - Are longer-term residents if out of county and shorter-term residents if in-county
Target Behaviors
Behaviors selected based on:

- Impact to the environmental issue
- Size of the potential market
- Willingness to perform
<table>
<thead>
<tr>
<th>NO ARMOR</th>
<th>ARMOR</th>
<th></th>
<th></th>
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<th></th>
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<tbody>
<tr>
<td># Parcels</td>
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<td>4823</td>
<td>4057</td>
<td>13,026</td>
<td>222</td>
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<td>17,273</td>
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<tr>
<td>% Length</td>
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<td>9%</td>
<td>14%</td>
<td>15%</td>
<td>24%</td>
<td>1%</td>
<td>6%</td>
<td>4%</td>
<td>26%</td>
</tr>
<tr>
<td>% Parcels</td>
<td></td>
<td>3%</td>
<td>11%</td>
<td>9%</td>
<td>29%</td>
<td>&lt;1%</td>
<td>5%</td>
<td>3%</td>
<td>38%</td>
</tr>
<tr>
<td>% Armored</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>42%</td>
<td>68%</td>
<td>63%</td>
<td>83%</td>
</tr>
</tbody>
</table>
Significance of Segment 4 and Segment 8 led to primary behaviors:

- Leave shore unarmored
- Remove all hard armor
- Remove a portion of hard armor
- Replace armor with soft-shore protection
Supporting Behaviors

For outreach workers to consider influencing:

- Maintain native vegetation (trees, shrubs, groundcover, backshore)
- Plant native vegetation (trees, shrubs, groundcover, backshore)
- Reduce surface water runoff reaching bluffs
- Build a generous setback (further from shoreline than current regulations require)
- Install soft-shore protection on unarmored property
- Move home further from the shoreline
- Obtain professional advice
## Primary Behaviors by Segment

<table>
<thead>
<tr>
<th>NO ARMOR</th>
<th>ARMOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leave Unarmored</td>
<td></td>
</tr>
<tr>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Remove All Hard Armor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove Portion Hard Armor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Replace Armor w/ Soft-Shore Protection</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table Legend
- **X** indicates a behavior that is taken.
- **No Home** indicates no home in that segment.
- **Erosion Potential** indicates the level of erosion potential (L, M, H).
- **Hard Armor** indicates the presence of hard armor.
- **Soft-Shore Protection** indicates the use of soft-shore protection.
## Secondary Behaviors by Segment

<table>
<thead>
<tr>
<th></th>
<th>NO ARMOR</th>
<th>ARBOR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Home</td>
<td>No Home</td>
</tr>
<tr>
<td>Maintain native vegetation</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Plant native vegetation</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Reduce surface water runoff</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Build a generous setback</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Install soft-shore protection on unarmored property</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Move home further from the shoreline</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Obtain professional advice</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>
Shoreline Landowner Survey Findings
Survey conducted in January and February 2014

- Mail and phone recruitment
- Online and phone administration
- Stratified by segment
- 74 questions
- 30% response
- n=1,164
Among 1,164 respondents:

- Mostly male respondents (68%)
- Most were retired (59%)
- Most 65 years old or more (58%)
- College degrees (81%)
- Six figure incomes (41%)
Property characteristics

Among 1,164 respondents:

• Year-round home (59%)
• Owned for 20+ years (54%)
• 42% with armor
• 42% low or no bank
• Key concerns: erosion and regulation
Targeted behaviors

Depending on parcel characteristics

• Remove armor (all or some)
• Leave unarmored shoreline
• Obtain expert advice
• Maintain native vegetation
• Plant native vegetation
• Address water drainage
• Build/move buildings further from shoreline
• Install soft-shore protection
## Shoreline landowners behavior

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removed all or a portion of existing armor</td>
<td>2%</td>
</tr>
<tr>
<td>Sought professional advice from planner or permitting official</td>
<td>16%</td>
</tr>
<tr>
<td>Home is further from shoreline than regulations require</td>
<td>33%</td>
</tr>
<tr>
<td>Did something to reduce drainage reaching bluffs</td>
<td>39%</td>
</tr>
<tr>
<td>Planted native vegetation</td>
<td>51%</td>
</tr>
<tr>
<td>Has left unarmored shoreline as is</td>
<td>58%</td>
</tr>
<tr>
<td>Has maintained native vegetation (rather than removing it)</td>
<td>89%</td>
</tr>
</tbody>
</table>
## Likelihood of behavior

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Likelihood of behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leave shore unarmored (n=494)</td>
<td>Very or somewhat likely</td>
</tr>
<tr>
<td>Maintain natives (n=106)</td>
<td>Very or somewhat likely</td>
</tr>
<tr>
<td>Install soft shore protection (n=151)</td>
<td>Very or somewhat likely</td>
</tr>
<tr>
<td>Address drainage (n=169)</td>
<td>Very or somewhat likely</td>
</tr>
<tr>
<td>Plant natives (n=568)</td>
<td>Very or somewhat likely</td>
</tr>
<tr>
<td>Obtain expert advice (n=978)</td>
<td>Very or somewhat likely</td>
</tr>
<tr>
<td>Replace w/ soft shore (n=474)</td>
<td>Very or somewhat likely</td>
</tr>
<tr>
<td>Remove some hard armor (n=474)</td>
<td>Very or somewhat likely</td>
</tr>
<tr>
<td>Remove all hard armor (n=474)</td>
<td>Very or somewhat likely</td>
</tr>
<tr>
<td>Build further back (n=14)</td>
<td>Very or somewhat likely</td>
</tr>
<tr>
<td>Move home back (n=737)</td>
<td>Very or somewhat likely</td>
</tr>
</tbody>
</table>
Leaving shore unarmored

<table>
<thead>
<tr>
<th>Erosion Concerns</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>185</td>
<td>27%</td>
</tr>
<tr>
<td>Concerned, has not considered how to address</td>
<td>260</td>
<td>38%</td>
</tr>
<tr>
<td>Concerned, has not considered armor</td>
<td>152</td>
<td>22%</td>
</tr>
<tr>
<td>Concerned, has considered armor but no plan to install</td>
<td>71</td>
<td>10%</td>
</tr>
<tr>
<td>Concerned, plans for armor in next 5 years</td>
<td>11</td>
<td>2%</td>
</tr>
</tbody>
</table>
Leaving shore unarmored (n=488)

• **Barriers**
  - Substantial changes in erosion (59%)
  - Concerned that the property was not protected from erosion (55%)
  - Storms, waves or tides changing the shoreline dramatically (50%)

• **Motivators**
  - Being confident the property would be protected or enhanced by it (54%)
  - Enjoying the natural look of it (46%)
  - Providing healthy habitat for fish and wildlife (42%)
Engineered soft-shore protection

Unarmored property owners:

- Familiar with the practice (59%)
- Among those with erosion concerns and plans to address it, considered having engineered soft-shore installed (22% of all unarmored)
- Very or somewhat likely to install (9% of all unarmored)
Engineered soft shore protection

- Barriers for unarmored owners
  - Regulatory and permitting difficulties (57%)
  - Expense (55%)
  - Concerned property would not be protected (41%)

- Motivators for unarmored owners
  - Being confident the property would be protected or enhanced by it (60%)
  - Getting a tax break or reduced fees (46%)
  - Streamlined permitting (30%)
Removing armor

<table>
<thead>
<tr>
<th>Ever considered...</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removing all or part armor and letting the beach naturalize</td>
<td>4%</td>
</tr>
<tr>
<td>Replacing with engineered soft shore protection</td>
<td>11%</td>
</tr>
<tr>
<td>Never considered removing or replacing</td>
<td>84%</td>
</tr>
</tbody>
</table>
Removing/replacing armor

**Barriers**
- Concerned property would not be protected (61%)
- Expense (54%)
- Regulations and permitting making process difficult (28%)

**Motivators**
- Being confident the property would be protected or enhanced by it (60%)
- Getting a tax break or reduced fees (28%)
- Getting a loan or grant (25%)
- Streamlined permitting and processes (21%)
## Market opportunity

<table>
<thead>
<tr>
<th>Primary behavior</th>
<th># of parcels</th>
<th>% of parcels likely to engage</th>
<th># of parcels likely to engage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leave shore unarmored (unarmored parcels)</td>
<td>21,998</td>
<td>94%</td>
<td>20,678</td>
</tr>
<tr>
<td>Replace armor with engineered soft-shore protection</td>
<td>21,874</td>
<td>17%</td>
<td>3,719</td>
</tr>
<tr>
<td>Remove a portion of armor</td>
<td>21,874</td>
<td>14%</td>
<td>3,062</td>
</tr>
<tr>
<td>Remove all hard armor</td>
<td>21,874</td>
<td>8%</td>
<td>1,750</td>
</tr>
</tbody>
</table>
## Market opportunity

<table>
<thead>
<tr>
<th>Supporting Behavior</th>
<th># of parcels</th>
<th>% of parcels likely to engage</th>
<th># of parcels likely to engage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtain expert advice</td>
<td>38,031</td>
<td>24%</td>
<td>9,127</td>
</tr>
<tr>
<td>Address water drainage</td>
<td>27,618</td>
<td>33%</td>
<td>9,114</td>
</tr>
<tr>
<td>Install soft-shore protection instead of hard armor (unarmored)</td>
<td>18,029</td>
<td>39%</td>
<td>7,031</td>
</tr>
<tr>
<td>Plant native vegetation</td>
<td>22,185</td>
<td>25%</td>
<td>5,546</td>
</tr>
<tr>
<td>Maintain native vegetation</td>
<td>4,980</td>
<td>90%</td>
<td>4,482</td>
</tr>
<tr>
<td>Build further from shoreline than current regulations require</td>
<td>8,731</td>
<td>7%</td>
<td>611</td>
</tr>
<tr>
<td>Move home further from shoreline</td>
<td>36,565</td>
<td>1%</td>
<td>365</td>
</tr>
</tbody>
</table>
Shore Friendly Social Marketing
Decision Process and Influencers

- **Considering Purchase**: Outreach staff, Realtors, Neighbors
- **Purchasing**: Outreach staff, Realtors, Neighbors
- **No Action**: Outreach staff, Realtors, Neighbors
- **Deciding to Take Action**: Outreach staff, Realtors, Professional Contractor
- **Making Inquiry for Assistance**: Outreach staff, Professional Contractor
- **Selecting Action**: Outreach staff, Professional Contractor
- **Applying for Permit**: Outreach staff, Permit Staff
Key Research Insights

Three groups of shoreline landowners:

• Category 1: Unarmored Properties (segments 1 through 4)

• Category 2: Armored Properties with No-Mid Erosion Risk (segments 5 through 8)

• Category 3: Armored Properties with High Erosion Risk (segment 9)
Audience Characteristics (sound wide, all categories)

Demographic trends that are significant as compared to overall population in Puget Sound Region:

- Older homes on property (45% built pre-1980)
- Have lived on property long-term
- Tend to be higher income (41% 125K+)
- College educated (81%)
- Age 65+ (58%) and many retired (59%)
- Strong voting habits
Audience Characteristics (sound wide, all categories)

Psychographic trends (values and beliefs):

- Think Puget Sound is in good health
- Have a personal/emotional connection to Puget Sound
- Strongly believe that the Shoreline should be protected/preserved for future generations
- Want to do the right thing but don’t know what that is
- Are hungry for information about how to responsibly manage their shoreline; have a desire and capacity for detailed information
52% of residential shoreline parcels (unarmored)

United by target behavior to leave shore unarmored

**Primary Barriers:**

- Concern with erosion
- Anticipation that storms, waves, or tides might change the shoreline

**Primary Motivators:**

- Belief that their unarmored property is sufficiently protected or enhanced by not having armor
- Natural look of shore created by not having armor
- Creating a healthy habitat for fish and wildlife by not having armor
- Tax breaks for not having armor
- Lower maintenance time and cost relative to armor
Category 1 Recommendations

- Start with this group to influence social norms
- Regulatory limitations address target behavior
- Address risk of illegal “do-it-yourself” armor projects
46% of residential shoreline parcels

United by target behaviors to:

1. Remove all existing armor
2. Remove some existing armor
3. Replace armor with soft-shore protection

Primary barriers

- Concern with erosion
- The expense of removing armor
- Complicated nature of the regulatory/permitting process to remove armor
Primary motivators

- Protecting or enhancing their property by removing armor
- Tax breaks for removing armor
- Loans, grants or reduced fees
- A streamlined permitting process
- Creating a healthy habitat for fish and wildlife
- If there were substantial changes in the erosion of their property
- If storms, waves or tides changed their shore or bluff
- Free expert advice without a sales focus
Category 2 Recommendations

Barriers to removing/replacing armor with soft-shore protection are high and must be addressed

Segments in this category for emphasis

- Segment 5 (armored property with no home/no erosion risk) – low hanging fruit (222 parcels, 6.4 miles)
- Segment 8 (armored property with home, low to med erosion risk) – largest segment (38% of residential shoreline parcels, about 300 miles)
Category 3

- One percent of residential shoreline properties (81% have armor)
- Have existing armor and high erosion potential
- Some form of armor is likely necessary to protect these properties
- There is risk that alternatives will yield less than ideal results – could cause negative word-of-mouth
Category 3 Recommendations

- Not a priority for social marketing efforts
- High erosion potential may make armor necessary
- Soft-shore solutions may underperform, causing negative word-of-mouth
Shore Friendly

- Region-wide identity for shoreline armor reduction efforts
- Provides consistent messaging framework and rallying point
- Designed to be co-owned by state/local jurisdictions and compliment existing programs
- Celebrates and leverages regional stewardship ethic and shoreline lifestyle
Shore Friendly Marketing Tools

- Assistance and Guidance
- Financial Incentives
- Non-Financial Incentives
- Promotions
- Influencer Tools
Assistance and Guidance

Regional Tools:

• Statewide Website: ShoreFriendly.com
• Free Erosion Assessments (development of tool)
• Shore Friendly Certification Program
Assistance and Guidance

Recommended Local Strategies:

- Local Website Portals on ShoreFriendly.com
- Free Erosion Assessments (implementation)
- Local Shore Friendly Ambassadors
- Shore Friendly Workshops
- Streamlined Shore Friendly Permitting
- Shore Friendly Plants
- New Homeowner Visits/Packets
Financial Incentives

Current tools to leverage:

- Current use tax assessment and public benefit rating systems
- Tax incentive for donation of land or conservation easement

New tools to develop:

- Free/discounted permits
- Shore Friendly grants
- Low interest Shore Friendly loans
- Free technical assistance
- Group rates for neighborhoods
- Shore Friendly tax breaks
Non-Financial Incentives

- Shore Friends
- Testimonials
Promotions

- Earned media
- Communications plan for erosion events
- Shore Friendly demonstration project tours
- Shore Friendly awards/recognition
Influencer Tools

**Realtors:** Specialized workshops

**Neighbors:** Social norming tools (Shore Friends, earned media, communications response)

**Outreach Staff:** Training and branded outreach materials for face-to-face outreach

**Professionals:** Shore Friendly certification

**Permit Office Staff:** Specialized workshops

**Contractors:** Shore Friendly certification
# Shore Friendly Messaging

<table>
<thead>
<tr>
<th>Audience:</th>
<th>Unarmored</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Message</strong></td>
<td>Leaving you shoreline unarmored means you can enjoy the natural beauty of your beach while also protecting the health of Puget Sound.</td>
</tr>
<tr>
<td><strong>Call to Action</strong></td>
<td>Learn how to be Shore Friendly. Sign up for a free erosion assessment to find out how protect your property and the habitat of Puget Sound.</td>
</tr>
<tr>
<td><strong>Shore Friendly Description</strong></td>
<td>Shore Friendly helps shoreline property owners make informed choices about how they manage and protect their shorelines. By being Shore Friendly you can protect the beauty of your shoreline while also protecting the health of Puget Sound.</td>
</tr>
</tbody>
</table>
**Shore Friendly Messaging**

<table>
<thead>
<tr>
<th>Audience:</th>
<th>Armored</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Message</strong></td>
<td>Removing your shoreline armor can enhance the natural beauty of your property, increase access to your beach and help protect the health of Puget Sound without sacrificing protection from erosion.</td>
</tr>
<tr>
<td><strong>Call to Action</strong></td>
<td>Learn how to be Shore Friendly. Sign up for a free erosion assessment to find out how to protect your shoreline while also protecting the habitat of Puget Sound.</td>
</tr>
<tr>
<td><strong>Shore Friendly Description</strong></td>
<td>Shore Friendly helps shoreline property owners make informed choices about how they manage and protect their shorelines. By being Shore Friendly you can protect the beauty of your shoreline while also protecting the health of Puget Sound.</td>
</tr>
</tbody>
</table>
Materials – Logo and Certification
Materials – Yard Sign
Materials – Website Landing Page

Welcome!

Shore Friendly connects Puget Sound landowners with resources to make educated, cost-effective and environmentally responsible decisions that protect their property from erosion.

To help us connect you with local Shore Friendly resources, please select your location from the menu below.

Images courtesy of Coastal Geologic Services.
Materials – Local Website

WELCOME, KITSAP COUNTY!

Shore Friendly connects Puget Sound landowners with resources to make educated, cost-effective and environmentally responsible decisions that protect their property from erosion.

ADDITIONAL LOGO HERE  ADDITIONAL LOGO HERE

Images courtesy of Coastal Geologic Services

COLEHOUR + COHEN
Public Relations & Social Marketing
Supporting Materials

Template Materials for local use and customization:

- Program fact sheet (for implementers)
- Fact sheet for property owners with armor
- Fact sheet for property owners without armor
- Testimonial
Using Shore Friendly

• Designed to be integrated or co-branded with existing programs
• Flexible and customizable for needs of local communities
• The more use, the better!
• Getting started:
  • Social Marketing planning how to guide
  • Brand Guidelines
  • Template materials
Evaluation Plan

Provide a tool for:

- Implementers to evaluate outreach strategies
- Program managers to measure progress toward desired goal(s)

Two components:

1. Summary Worksheet
2. Reference Guide
Program Description: Organization, Audience, Behavior

Evaluation Plan:

• Purpose
• Metrics
• Measurement Plan
• Return on Investment
• Impact
Developing a Purpose Statement

Defining Metrics: Inputs, Outputs, Outcomes

**Measurement Plan:**

- How to measure
- Who and when
- Cost

Calculating Return on Investment

Intended Impact & Potential Measurement
## Metrics

<table>
<thead>
<tr>
<th>INPUTS</th>
<th>OUTPUTS</th>
<th>OUTCOMES</th>
</tr>
</thead>
</table>
| **What Resources Will Be Allocated to Campaign:**  
  • Dollars  
  • Staff Time  
  • Volunteer Time  
  • Existing Materials | **What Will We Spend Resources On:**  
  • Activities  
  • Materials  
  • Media Placement  
  • Site Visits  
  • Other Outreach  
  • Research | **What Target Audience Responses Will Be Measured:**  
  • Awareness  
  • Understanding  
  • Attitudes  
  • Intentions  
  • Behaviors |
Return on Investment

Determining the cost to change one behavior:

• Money spent
• Behaviors influenced
• Cost per behavior influenced
Intended Impact

Behaviors: (4 Primary and 7 Secondary)

Impact:

• Describe the potential desired benefit for fish and wildlife

How impact will be measured
Next Steps and Q/A