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Salish Sea Ecosystem Conference

2016 Salish Sea Ecosystem Conference  
(Vancouver, BC)

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Jan 1st, 12:00 AM - 12:00 AM

## Holding the line, to let shorelines move naturally

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Loring, Kyle, "Holding the line, to let shorelines move naturally" (2016). *Salish Sea Ecosystem Conference*. 32.

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# Holding the line, to let shorelines move naturally



Friends of the San Juans [www.sanjuans.org](http://www.sanjuans.org)



**Overview:** San Juan County may not need to worry about large industrial plants along its shorelines. However, residential development and its attendant docks, bulkheads and vegetation removal threaten the islands' natural shoreline functions. Cumulatively, these changes harm nearshore habitats and resources that species like surf smelt and juvenile salmon rely on. Nonetheless, local permitting and policy proposals continue to facilitate declines in shoreline health.

This poster identifies simple legislative changes that could protect shoreline health, and explains why litigation is sometimes necessary to protect against avoidable shoreline modifications.

## Why protect shoreline vegetation?

- It provides areas for feeding, roosting, breeding, refuge, migration corridors, and clean water. In exchange, receives nutrients from that wildlife, contributing to high productivity and species diversity.
- It reduces runoff volume and velocity, benefitting filtration and soil retention.
- It intercepts rainfall, binds soil to roots, slows surface runoff, and moderates soil moisture, thereby managing fine sediment in runoff so that it nourishes beaches without over loading them.
- Its overstory trees, understory shrubs, and ground-level plants intercept sun and moderate other microclimate factors like moisture and temperature.

## How do different types of shoreline vegetation impact the broader ecosystem?

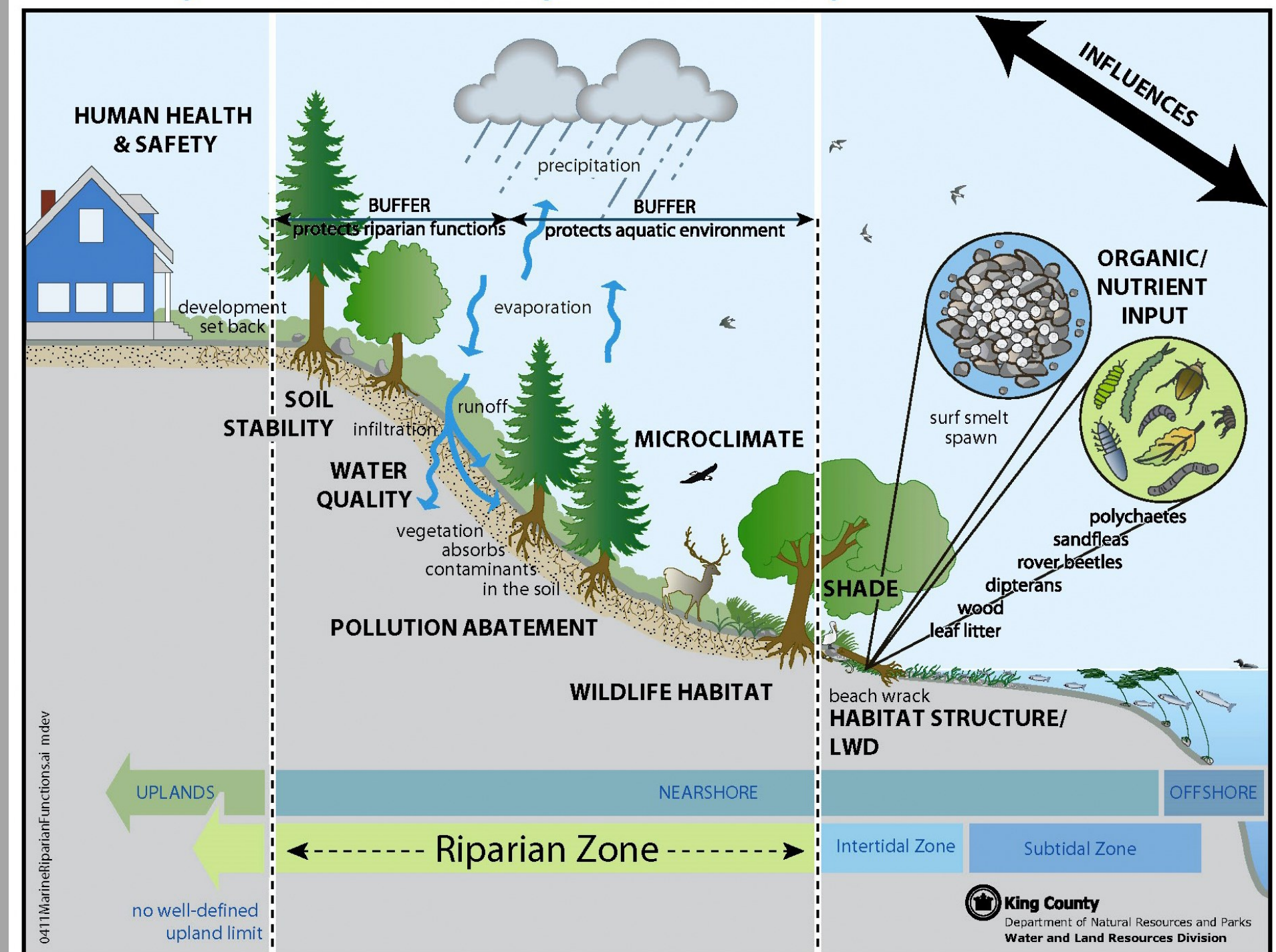
**Fallen trees:** moderate water and soil temperature and moisture; accumulate detritus for invertebrate food and habitat; support terrestrial vegetation like nurse logs; add structural complexity; and control erosion.

**Leaves, bark, needles, and twigs:** serve as habitat and food for fish and aquatic invertebrates; influence the number and type of insects that fall into the water (insects constitute a substantial portion of the diet for threatened juvenile Puget Sound Chinook salmon).

**Plants and roots:** maintain slope stability; intercept and absorb water to reduce runoff volume and velocity.

Citation: Jim Brennan, et al., *Protection of Marine Riparian Functions in Puget Sound, WA, prepared for WA Dept. of Fish and Wildlife, WDFW Agreement 08-1185 (June 15, 2009).*

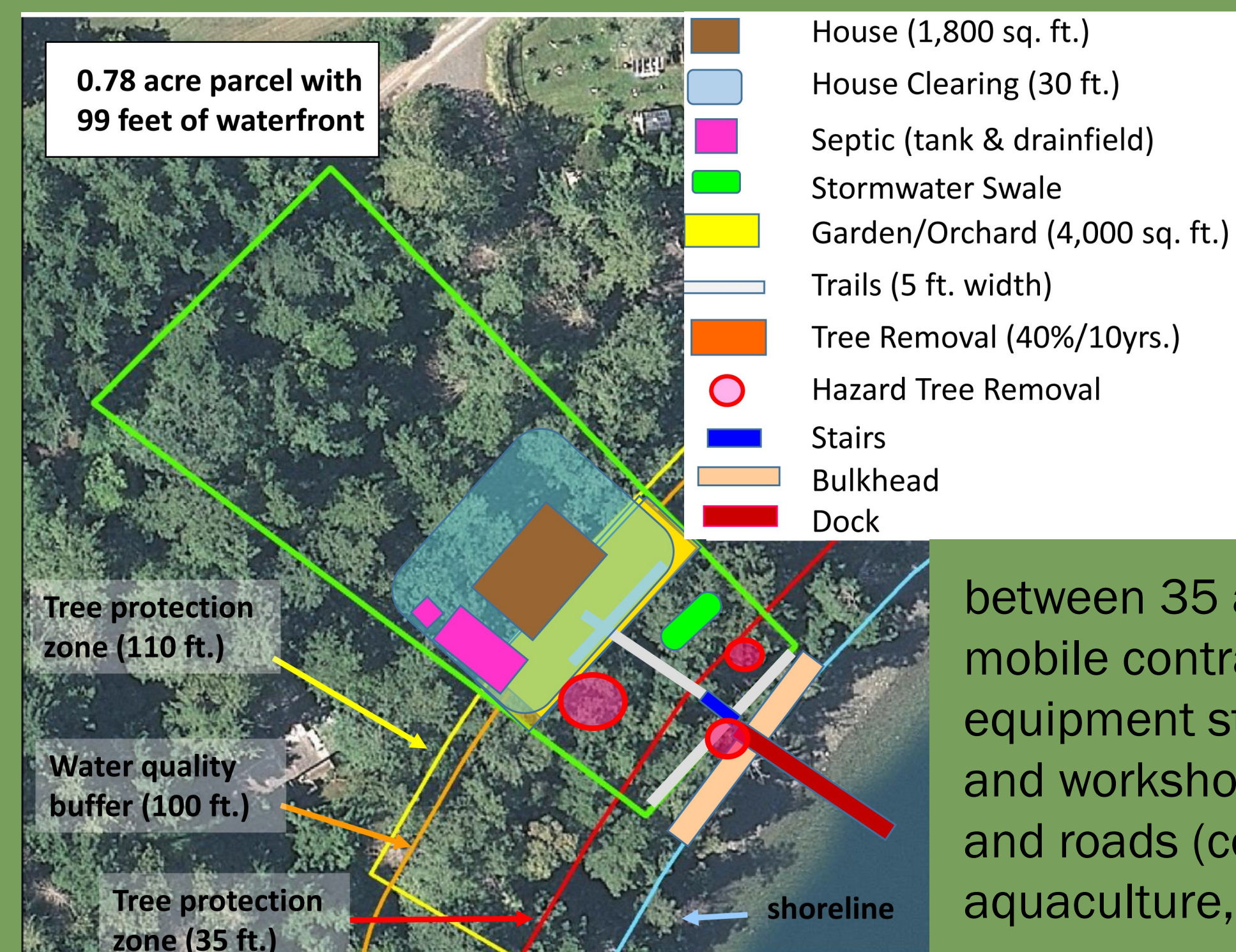
## Conceptual Model of Marine Riparian Functions



Support provided from Friends of the San Juans members, Northwest Fund for the Environment and The Horizons Foundation. Thank you!

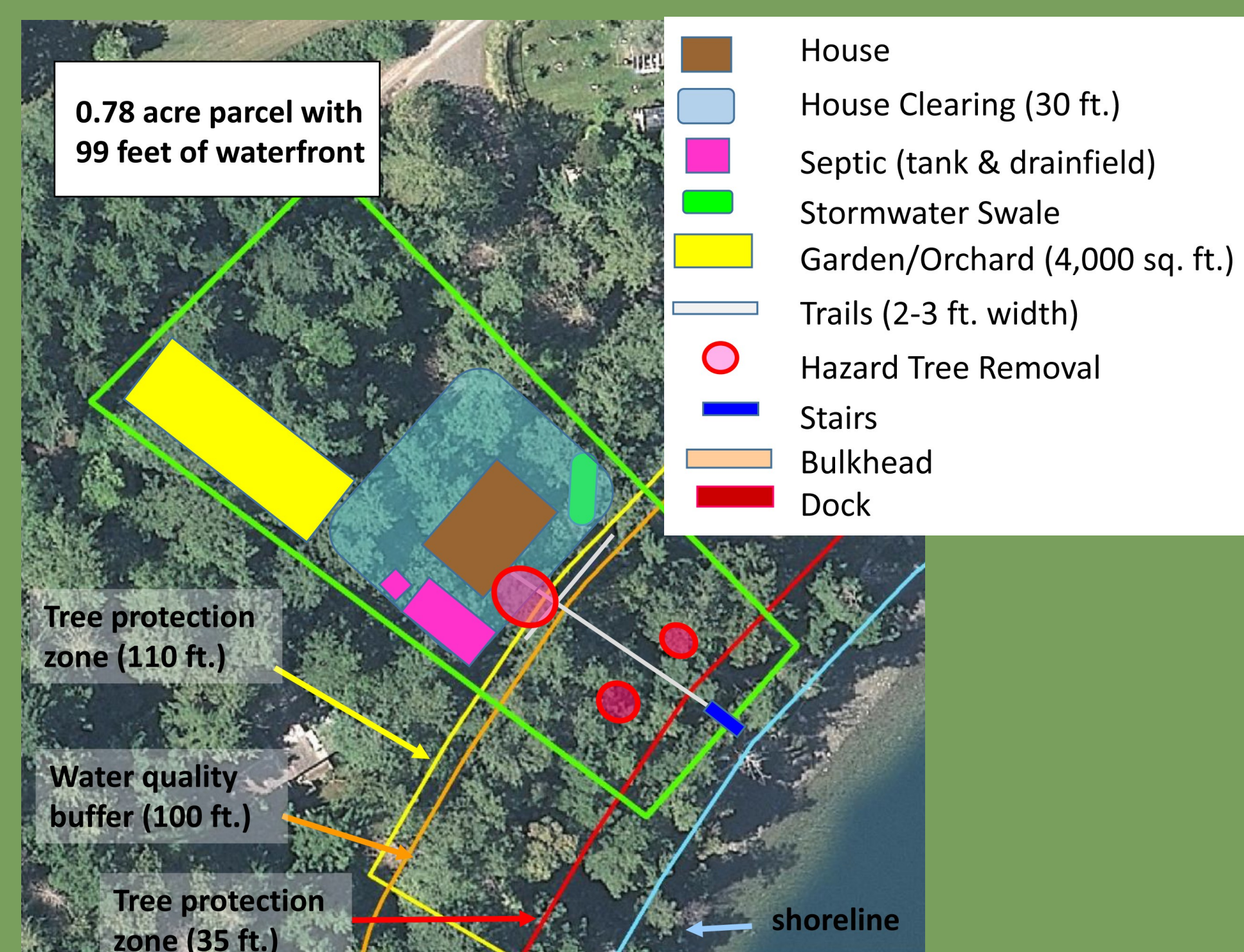
## Legislative approaches – maximizing views or protecting public resources?

In 2016, San Juan County proposed its Shoreline Master Program (“SMP”) update. Rather than apply current science to adequately protect vegetation, it established undersized buffers that authorize unnecessary activity. The diagrams below show how development would be authorized in those buffers and how easy it would be to do the same activities outside the buffers.



This figure shows development permitted by San Juan County’s SMP. Additional activities allowed: annual removal of 20% of buffer foliage; 40% tree removal

between 35 and 110 feet; mobile contractor offices, equipment storage, storage yards, and workshops; stream crossings and roads (conditionally); and aquaculture, wells, fences.



This figure shows how easy it would be to allow the same activities outside the buffer.

## Washington State’s Shoreline Management Act

Established in 1971. Broadly construed to protect shorelines as fully as possible.<sup>1</sup> Contemplates the adoption of local regulations that:

- use current, accurate, complete science<sup>2</sup>
- achieve no net loss at site and county scale<sup>3</sup>
- conserve remaining ecological functions<sup>4</sup>
- promote restoration<sup>5</sup>
- protect and restore vegetation per science that recommends 250-foot riparian area that minimizes activities that could impact riparian functions, such as tree cutting, road building, agriculture, clearing, or construction.<sup>6</sup>

1. RCW 90.58.900; *Buechel v. Dep’t of Ecology*, 125 Wn.2d 196, 203, 884 P.2d 910 (1994)  
 2. WAC 173-26-201(2)(a), -221(2)(b)(2). 3. WAC 173-26-186(8)(b).  
 4. WAC 173-26-186(8), -201(2)(c), (f), -221(2)(b), (c) 5. WAC 173-26-186(8)(c), -221(2)(b), (c)  
 6. WAC 173-26-221(2)(c)(iii)(B), -221(5) (citing Washington Department of Fish and Wildlife publication titled *Management Recommendations for Washington’s Priority Habitats*).

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## Preventing unnecessary armoring of surf smelt spawning beaches.

In 2014, Friends of the San Juans won two Shoreline Hearings Board (“SHB”) cases, preventing two new, unnecessary bulkheads on a documented surf smelt spawning beach on San Juan Island. The proposed two-tiered, 20-foot-tall walls would have replaced most of the vegetation shading the spawning beach and supplying insects for juvenile Chinook salmon on a highest priority salmon recovery shoreline.



This is the well-vegetated shoreline that would have been replaced by large rock walls if Friends had not initiated citizen action.

## The Board reversed the permits, concluding that:

### Permit # 1 – Rockery on vacant parcel <sup>1</sup>

- Normal erosion at 1.5 cm/year is not serious.
- A vacant lot is not an established use for bulkheading.
- An evaluation of non-rock alternatives is required.

### Permit # 2 – Rockery on developed property with bedrock toe <sup>2</sup>

- There is no reasonable threat if it will take 600 years before erosion threatens the house.
- Replacing a naturally-vegetated shoreline with a rock wall harms natural shoreline processes, shade, large woody debris, insects.
- A rock toe of bank and mature trees indicate a stable slope.
- An evaluation of non-rock alternatives is required.

1. *Friends of the San Juans v. San Juan County, et al.*, SHB No. 13-015, Findings of Fact, Conclusions of Law, and Final Order (June 2, 2014).

2. *Friends of the San Juans v. San Juan County, et al.*, SHB No. 14-008, Findings of Fact, Conclusions of Law, and Order (Oct. 17, 2014)

## Creative Scientific Theories: Novel theories from the applicants’ consultants required expert rebuttals:

- The Fraser River builds San Juan County beaches—experts testified that gravels from the Fraser River travel into Haro Strait and then work their way up from depths to land on beaches.
  - The SHB found it more credible that San Juan beach gravels come from natural erosion of the bank behind the beach.
- Long-term erosion rates are immaterial because they do not include episodic events.
  - The SHB found that long-term erosion includes the occasional sloughing of larger amounts followed by years with negligible erosion.
- Sea levels are not rising in San Juan County.
  - Sea level rise is well documented in the region.