

## Part II

### Ecosystem Monitoring – a SUMMARY of local efforts in San Juan County

This document accompanies the *San Juan County Marine Stewardship Area (MSA) Monitoring Plan*. It is meant to be a guide to current locally based monitoring efforts, and incorporates projects related to marine, nearshore and freshwater habitats. A more comprehensive Excel document, *MRC's Monitoring Database*, can be found in Appendix D and contains past and ongoing monitoring efforts conducted by local, regional, state, tribal, federal and transboundary agencies and organizations in the San Juan Islands. Most terrestrial components of both the Summary and the Plan are yet to be included.

There are four key components to the effective ‘adaptive management’ of ecosystems:

#### **Monitoring**

#### **Outreach & Education**

#### **Enforcement**

#### **Restoration & Protection**

Monitoring provides essential data for all of the other components, as well as giving an indication of whether or not chosen actions are working. Our shared ecosystems are impacted by both legislation (county, state and federal) and by the choices each of us make about which products to use and what practices to follow for our boats, property and automobiles, and in our homes, gardens, barns, backyards, fields, forests, and businesses.

The following table shows locally based ecosystem monitoring (marine, nearshore, freshwater) or related efforts that

1. are currently active and fulfilling a goal/s of one or more of the following local planning processes, OR
2. have been identified as a need in San Juan County by one or more of the following local planning processes:

Pilot Stormwater Monitoring Plan

Marine Stewardship Area Management and Monitoring Plans

San Juan Chapter (WRIA 2) of the Puget Sound Chinook Salmon Recovery Plan

Shoreline Master Plan updates (San Juan County; Town of Friday Harbor)

SJC Action Agenda (a chapter of the Puget Sound Action Plan) and local Implementation Committee efforts

SJC Critical Areas Ordinance update

Water Resources Management Plan for WRIA 2

The effectiveness of plan implementation is determined by *monitoring!* And accurate baselines are a must. Important as ecosystem monitoring is known to be, funding is often very difficult to secure. Note that funders can “add value” to local efforts by contributing to specific aspects of ongoing monitoring efforts, or by supporting currently unfunded efforts that have been identified through local planning processes as “needed.” In return, local programs cover parameters and/or locations not being monitored by wider efforts. Partnering at all levels increases outcomes and decreases redundancy.

Monitoring by nature requires a long term commitment of resources including time, people and money. Programs at all levels (local, regional, state, national and trans-boundary) often rely upon community volunteers. The synergy of involving community members not only increases the amount and type of data collected, it also *geometrically* increases outreach and education, while decreasing the need for enforcement actions.

All of the following efforts have been identified as “NEEDED,” therefore, if the monitoring effort has a current status of “Unfunded,” funding is needed to continue or to start up. If an effort has a status of “Ongoing,” additional funding may well be needed to continue or expand the effort to meet the goals of one or more of the above listed plans.

**TABLE 1. Local Ongoing Monitoring in the MSA**

Adults accompany grade school students      Acronyms on following page FH = Friday Harbor      gs = graduate students      PA = Preservation Area (voluntary)

| Monitoring Effort  | Status     | Principle/s  | Volunteer Component                                   | Needs   |
|--|------------|--|---|---|
| <b>Core Community Science Organizations</b> - train and coordinate community volunteers for many of the specific monitoring efforts that follow this section |            |  |   |   |
| Beach Watchers (BW) projects throughout SJC  | Ongoing    | San Juan WSU Extension                                 | Adults  | Continue basic operations, including training and coordination of volunteers  |
| Community Science Groups; Marine Health Observatories  | Ongoing    | Waldron; Kwiaht & BW for 3 MHOs & Lopez Salmon Team    | All ages  | Coordination; maintenance of existing sites; nets, equipment storage  |
| Projects throughout SJC  | Ongoing    | Friends of the San Juans (FSJ)                         | Adults  | Project specific – training, coordination, supplies, equipment, analysis, synthesis                                 |
| <b>Water Quality (marine, nearshore and freshwater)</b> - multiple sites throughout SJC (including marine waters)  |            |  |   |   |
| Marine Water Profiles  | Ongoing    | FH Labs; FSJ   | gs; FSJ   | Collection, data analysis and interpretation for additional sites   |
| Sediments  | Ongoing    | Kwiaht   | BW, MHOs  | Establish baselines; additional sites; lab analysis   |
| Stormwater; parameters & sites limited due to funding  | Begin 2011 | SJC Stormwater Utility; Mike Kaill (Port FH aquarium)  | Adults  | Establish baselines; analysis, synthesis & coordination; tests for additional parameters & sites, plus storm events |
| Stream Health-longest fresh water WQ data set in SJC   | Unfunded   | FH Labs w/ Schools                                     | 4 <sup>th</sup> grade, BW                             | Reinitiate program; collection of flow data; synthesis  |
| <b>Biodiversity Baselines (marine, nearshore and freshwater)</b> - multiple sites throughout SJC (including nearshore communities)                           |            |  |   |   |
| Stream Typing  | Ongoing    | Kwiaht   | MHOs, BWs   | Long term monitoring  |
| Rocky Intertidal   | Ongoing    | FH Labs; FSJ; Kwiaht                                   | gs; FSJ; BW, MHOs                                     | Establish baselines; synthesis of data  |
| Rocky Sub-tidal  | Ongoing    | FH Labs; Kwiaht  | gs; BW, MHOs  | Establish baselines; synthesis of data  |
| <b>Specific Species (marine and nearshore)</b> - multiple sites throughout SJC   |            |  |   |   |
| Eelgrass, Kelp, Seagrasses   | Ongoing    | FSJ; FH Labs; Kwiaht                                   | FSJ; gs; BW, MHOs                                     | Site specific monitoring; 5-10 year updates for countywide assessments  |
| Invasive Clams   | Ongoing    | FH Elementary School                                   | 3 <sup>rd</sup> grade                                 | Increased coverage  |
| Killer Whales- Southern resident & transient   | Ongoing    | Beam Reach; Center for Whale Research; Orca Sound; TWM | gs; adults  | Program maintenance   |
| Forage Fish (Pacific Sandlance & Surf Smelt)   | Ongoing    | FH Labs; FSJ; Kwiaht                                   | gs; FSJ; BW, MHOs                                     | Further identification of spawning beaches; other life history stages; periodic updates of previous surveys         |
| Phytoplankton, Zooplankton   | Ongoing    | Beam Reach; FH Labs; Kwiaht                            | gs; BW, MHOs  | Program maintenance, increased coverage   |
| Rockfish, Lingcod, Greenling   | Ongoing    | MRC; FH Labs; Kwiaht w/ schools                        | BW, MHOs; gs; 7 <sup>th</sup> & 8 <sup>th</sup> grade | Increased coverage in & out of voluntary Preservation Areas   |
| Seabirds   | Ongoing    | FH Labs; Kwiaht  | gs; BW, MHOs  | Establish baselines   |

| <b>Monitoring Effort</b>  | <b>Status</b>       | <b>Principle/s</b>                      | <b>Volunteer Component</b> | <b>Needs<br/>Current and Potential (?) Funding Avenues</b> |
|---|---------------------|---|----------------------------|--|
| <b>Restoration (pre &amp; post)</b> - multiple sites throughout SJC (including shorelines and freshwater) |                     |   |                            |  |
| <b>Shoreline Structures</b> – shorelines around major islands   |                     |   |                            |  |
| Restoration Projects  | Ongoing or Unfunded | FSJ; Kwiaht                             | FSJ; BW, MHOs              | Pre & post for specific projects; long term monitoring     |
| Shoreline Modification Survey   | Unfunded            | Friends of the San Juans ( <b>FSJ</b> ) | FSJ, BW                    | Periodic updates (5-10 years)                              |
| <b>Local Outreach</b>   |                     |   |                            |  |
| Project and Issue Specific  | Ongoing             | Stewardship Network                     | BW, MHOs                   | Continued coordination; outreach materials and workshops   |