Jefferson County Marine Resources Committee

County: Jefferson
Grant No: G1000023

PROJECT TITLE: Northwest Straits Project: Marine Resources Committee Administration & Action Project

PROGRESS REPORT: [] FINAL REPORT [✓]

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DATE SUBMITTED: June 20, 2011

Attachments: Task 4 Deliverables – Voluntary No-Anchor Eelgrass Protection Zone, A Non-Regulatory Marine Protected Area, Port Townsend, Washington, Summary Report, June 2011

Appendix A: Volunteer Hours
Appendix B: Advertising & Press
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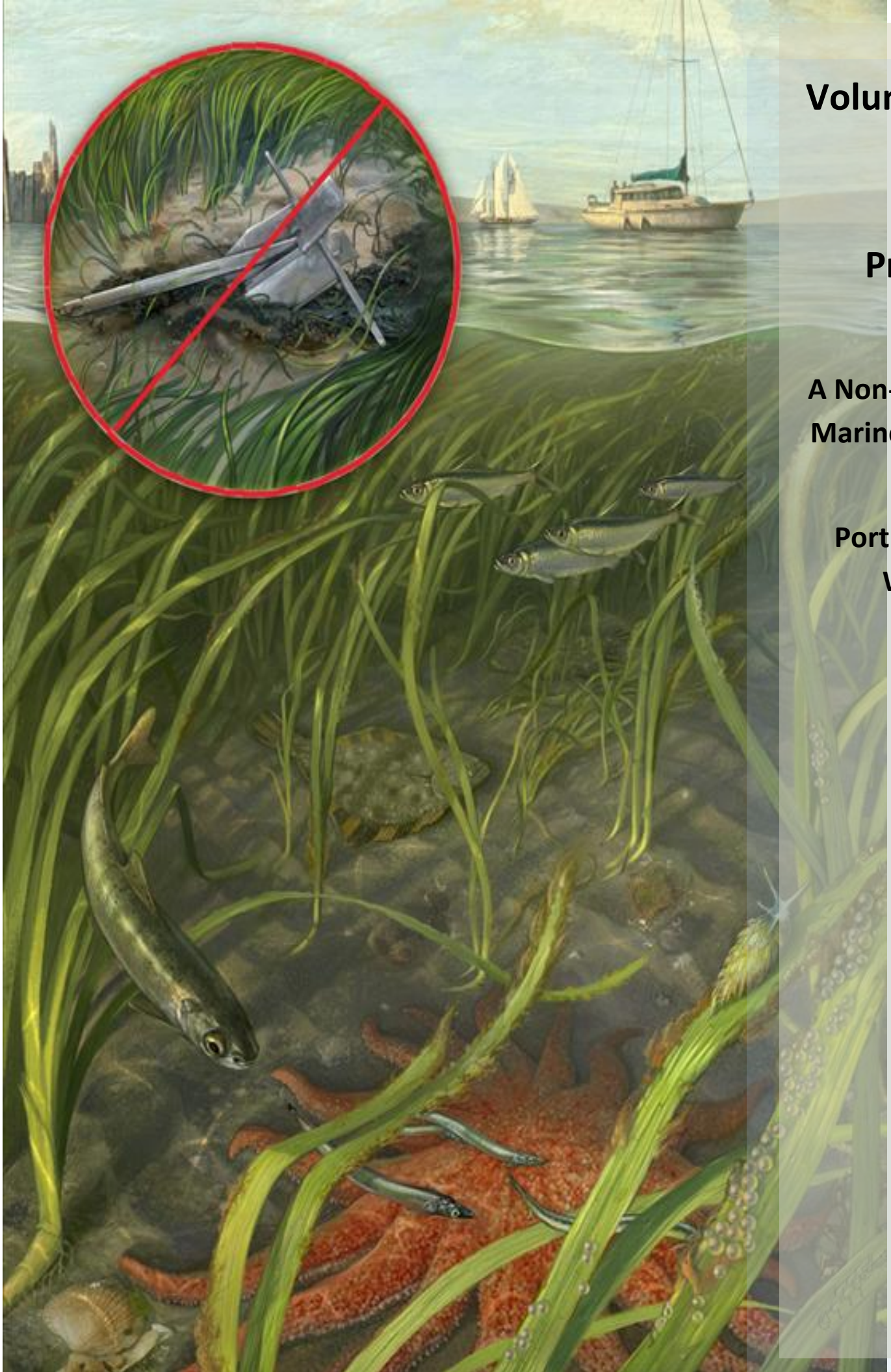
Appendix D: jpeg images on CD

This report was funded in part through a cooperative agreement with the National Oceanic and Atmospheric Administration.



Voluntary No-Anchor Eelgrass Protection Zone

A Non-Regulatory Marine Protected Area

Port Townsend, Washington

Summary Report

June 2011

Prepared by

LaRoche + Associates

Port Townsend WA 98368 • 360.531.2458

for

Jefferson County MRC Marine Resources Committee
www.jeffersonmrc.org

&

NORTHWEST STRAITS
marine conservation initiative

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Special thanks to East Jefferson Fire and Rescue (EJFR) for donating their staff time, SCUBA diver vessel, captain and deckhand for buoy removal and installation in 2010-2011.

Jefferson County Marine Resource Committee (JMRC) Eelgrass Protection Work Group

Judy D'Amore, JCMRC-Marine Science Practitioner

Phil Johnson, JCMRC-Board of County Commissioners

Steve Lewis, JCMRC-Recreation Representative

Andrew Palmer, JCMRC-District 2

Buoy Installation & Removal Team

Michael Adams, JCMRC Chair - Buoy Rigging

Randy Bartholomew, EJFR – SCUBA Diver

Rickey Kelly, Marine Survey Assessments – SCUBA Diver

Gabrielle LaRoche, JCMRC Project Manager - Buoy Rigging and Logistics

Steve Lewis, JCMRC Recreation Rep.- Buoy Rigging

Tony Petrillo, JCMRC District 2 - Buoy Maintenance

Andrew Palmer, JCMRC District 2 -Buoy Rigging and Shore Support

Rolf Schuman, EJFR - Boat Captain

Monitoring

Gabrielle LaRoche, JCMRC Project Manager

Video Promotion

Shelly Solomon, Leaping Frog Films Videographer

This report is dedicated to the memory of Steve Lewis. Steve generously loaned his boat, "Coaster", tirelessly volunteered his time and skills for annual rigging, cheerfully staffed the MRC's Wooden Boat Festival booth, took a leading role in the Eelgrass Stewardship video and regaled us all the while with jokes, salty tales and sea shanties. Just two weeks before his death in January 2011, Steve hosted a get together at his shop of MRC Eelgrass Committee members, to teach splicing, pass on his rigging skills and knowledge, and share a few songs.

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"It's a voluntary program and it's very successful", Mike Porter – retired airline pilot and former JCMRC member

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Figure 2 - Eelgrass (Zostera marina)

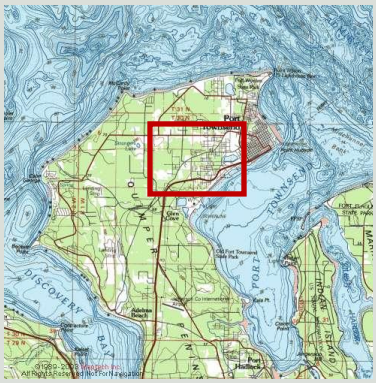

Figure 3 - location along Port Townsend waterfront

Summary

The summer of 2011 is the eighth season of voluntary eelgrass protection along the Port Townsend waterfront. For the past seven years, the marker buoys that delineate the no anchor-zone, combined with interpretive signs and brochures, have succeeded in preventing boaters from anchoring in critical habitat for young salmon and other marine life.

The goals of the project are twofold: to minimize the negative impacts of boats anchoring in the nearshore eelgrass (figure 2); and to increase boater safety in a risky anchorage area. The Jefferson County Marine Resources Committee (JCMRC) maintains the Voluntary No-Anchor Eelgrass Protection Zone, installing marker buoys during the peak boating season.

During the summers of 2010 the JCMRC implemented the project as established in 2004 with minor adjustments, and with an eye to expansion in other locations while seeking partners to maintain the project along the Port Townsend waterfront. Project monitoring of vessel locations showed the number of boats anchoring in the eelgrass dropped from a baseline of 20% during the 2003 boating season to 1.2% in 2004 (McConnell 2005) and 1% in 2005, 2006, 2007 and 2008 and < 1% in 2009 and 2010.[1]

Background

In 2002, JCMRC set out to establish a boater education strategy to reduce the negative effects of boat anchors & chains on the nearshore eelgrass (Zostera marina) meadows along the downtown Port Townsend waterfront. Surveys completed in 1999 show about 20 acres of eelgrass are present with the mean maximum depth ranging from -10.5 ft to -17.0 ft MLLW (Norris and Fraser, 2002).

The Project Area is part of a one-mile stretch of waterfront from Point Hudson to Boat Haven (figure 3). The current focus is on protecting eelgrass in the most heavily used portion, a half-mile section in front of the vibrant downtown commercial district, from Point Hudson to the Washington State Ferry Terminal, where the Voluntary Eelgrass Protection Zone is located (figure 4). The adjacent

[1] 2011 data will be available in October 2011

shoreline development is a nationally-registered Historic District and Victorian Seaport and a popular tourist destination. The project is specifically designed without regulatory or penalty components, making it a completely voluntary program.

Eelgrass is a valued marine resource because it provides critical habitat to commercially-, recreationally- and ecologically-important species including salmon, Brandt geese, crab and herring, and it helps reduce shoreline erosion by absorbing wave energy (Wyllie-Escheverria et. al., 2003). The state has a "no net loss" policy to help protect this priority habitat. Distribution of eelgrass habitat is affected by several physical parameters including type of substrate, water clarity, wave energy and tidal amplitude (Berry et. al., 2003). Over-water structures that cause shadowing can have negative effects by limiting available sunlight, (Snohomish County JCMRC, 2001) and dragging anchors and chains cause sediment disturbance, as well as crush and uproot eelgrass plants (figure 5).

Phase I of the project began in the spring of 2003 with initial public scoping with the boaters and the local community, as well as a three-day project trial during the popular Wooden Boat Festival in the fall. The JCMRC proposed using a line of seasonal marker buoys to delineate the deepest edge of the fragile submerged vegetation along with informational signage, brochures and other outreach publications to inform boaters and the public of a half-mile long Voluntary Eelgrass Protection Zone. While delivered as a boater education strategy, the project also qualifies as a community-designated marine protected area (MPA). The term MPA refers in general to any site in a marine system with some type of management restriction in place that affects access, harvest or other human activities, whether regulatory or voluntary (PSAT, 2005.)

Public opinion has been generally very favorable and both local and visiting boaters have responded positively. A few initial concerns expressed about boater perceptions and the need for additional mooring options were addressed and baseline data were established showing that throughout the summer boating season, approximately 20% of boats anchored in the eelgrass of the project area – including the busy Wooden Boat Festival weekend. (McConnell, 2004) All required permits were obtained and the project moved forward with buoy installation in 2004. This report summarizes continued implementation of the Eelgrass Protection zone along the Port Townsend waterfront from July 2010 through June 2011. It also discusses the options for project partners, project expansion and funding.

Buoy Deployment

Equipment Specifications

The JCMRC deploys seven 74" can-style regulatory buoys with the project logo affixed to both sides of the 9"-diameter high-impact polyethylene cylinders. Each buoy is injected with polyurethane foam, and ballasted at the base with hydraulic concrete, weighing 70lbs in total. Each has a recessed forged-steel swivel eye installed in the base and sits upright in the water

with 32” of the buoy above the waterline. Buoy tackle includes ¼” diameter, three-strand polypropylene line, ¼” thimble eyes, 3/8” and 5/8” screw-pin shackles and jaw-eye swivels, 5” mid-line floats, helical screw anchors (figure 6).

The buoy tackle systems are spliced lines, adding mid-line floats and securing shackle pins with wire keepers. Regulatory permits required an additional 2’ of scope beyond the highest estimated tide for a total of 14’ above the water depth at mean lower low water (MLLW). Therefore, if the lateral and offshore placement located the buoy anchor in 20’ of water (MLLW) the scope would be 34’.

Buoy Installation and Removal

In May of each year, seven (7) seasonal marker buoys are installed to delineate the deepest edge of the eelgrass beds along the downtown Port Townsend waterfront. Removal is scheduled after the Wooden Boat Festival and usually occurs during the month of October. The tackle between the helix anchor up to and including the mid-line float is left in year-round and serviced by the divers during spring installation.

A team of two divers is needed to install and remove the buoys. The JCMRC prefers to work with professional divers because of the experience and added measure of safety they bring to the operation. Particularly during the installation process, it can be challenging to locate the mid-line floats. Visibility along the Port Townsend waterfront is frequently impaired by spring rains and stormwater runoff. In addition to the dive team, a vessel captain, at least one deckhand and one shore support person are needed. Last minute rigging adjustments and shackle changes are often needed, making a second deckhand very useful.

The preferred installation method uses sightings to fixed points along the shore, water depths using the vessel’s depth-sounder and a GPS unit. The technique for locating the mid-line float involves motoring to the pre-programmed waypoint and dropping a small “cannonball” weight with a temporary float to mark the location of the coordinates. The location of the helix anchors is a minimum of 20’ seaward of the edge of the eelgrass beds so there is no potential of harm to the eelgrass from the “cannonball” weight. The divers tie a 20’ line perpendicular to the line that runs between the “cannonball” and the temporary float. Then they swim in a spiral out from the marked point, using the line as a

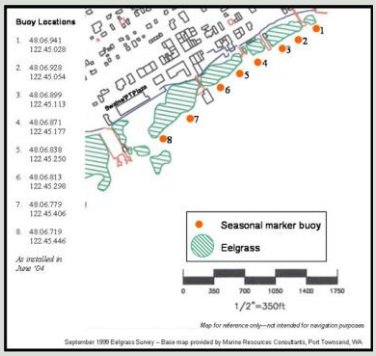

Figure 4 - voluntary eelgrass protection zone

Figure 5 - dragging anchors crush and uproot eelgrass

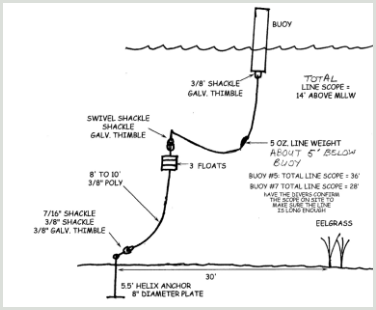

Figure 6 - tackle system

Figure 7 - divers Kelley & Bartholomew complete attachment of buoy to midline float, May 2011

radius. With this method, the divers are able to locate the midline float even in poor visibility conditions.

Buoy Locations							
No.	Easting (ft)	Northing (ft)	N Latitude (dd	m.mmmm)	W Longitude (ddd	mm.mmmm)	Anchor Depth (ft)(MLLW)
1	1170413	411517	48	6.7226	122	-45.4501	16
2	1170652	411889	48	6.7848	122	-45.3937	12
3	1171031	412068	48	6.8158	122	-45.3018	14
4	1171233	412165	48	6.8423	122	-45.2033	17
5	1171531	412357	48	6.8653	122	-45.1807	28
6	1171793	412574	48	6.9022	122	-45.1178	28
7	1172134	412760	48	6.9342	122	-45.0352	24

Table 1. Eastings and northings are in Washington state plane -north zone (NAD) coordinates

Equipment Failure

In the first two years the project experienced numerous equipment failures at a rate of 37.5% (McConnell 2005). As a result the mushroom anchors were replaced with helical screw anchors for the summer or 2005. Also in 2005, several of the buoys were listing upon deployment. This turned out to be a result of defects in manufacturing. As such the buoys were replaced at the expense of the manufacturer.

More recently the equipment failures appear to be related to the swivel shackles or abraded lines. For this reason, the MRC recommends replacing line and swivel shackles every other year. With this protocol, equipment failure has been reduced to less than 7%.

Project Monitoring

2010-2011 Dock-line Photos

During the summer of 2010, dock-line photo monitoring was conducted by JCMRC project manager, Gabrielle LaRoche (figure 8). Photos are taken from the various piers and sighting down the line of the marker buoys (figure 9) to determine if vessels are complying with the Voluntary No-Anchor Zone.

Pre-project dock-line photos were taken in 2003 using the ends of the piers as a rough guideline to determine a baseline of typical anchoring practices. Photos taken on 27 days during 2003 showed an average of approximately 20% of boats anchoring in the project area anchored well inside the dock-line, and therefore in the nearshore eelgrass meadows (McConnell 2005).

Dock-line photos were taken on 9 days during 2004 and showed an average of only 1.4% of boats anchoring inside the Voluntary Eelgrass Protection Zone (McConnell 2005). Dock-line photos taken since that time showed an average of only 1% of boats anchoring inside the Voluntary Eelgrass Protection Zone. During 19 days of monitoring in 2010 no vessels were observed within the Voluntary Eelgrass Protection Zone.

Given the significant drop in the number of boaters anchoring in the eelgrass, the buoys appear to be successful at changing boater behavior to the benefit of the submerged eelgrass habitat. Continued monitoring of the project is needed, especially while buoys are installed, during the busiest part of the boating season.

Figure 8 - boats anchor seaward of the marker buoy (buoy is in the lower right-hand corner) – September 2010

Figure 9 - dock-line photos are taken sighting down the line of marker buoys – June 2011

Boater Education & Public Outreach

Informational Signage

In the spring of 2004, six interpretive signs were installed along the shore to inform boaters and the public about the purpose of the seasonal marker buoys and the no-anchor zone (figure 10). In 2007

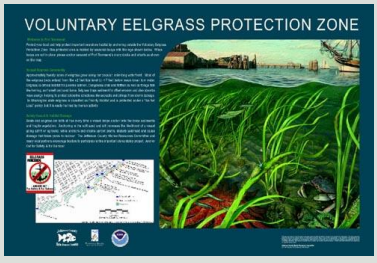

Figure 10 - interpretive sign at six locations

"This sign, installed in Jefferson County, is a good example of a sign that includes all three components of a marine environmental philosophy", Katrina Lassiter – graduate student.

new aluminum signs were installed to replace the original steel signs which had begun to deteriorate in the marine environment. A seventh sign was installed in 2010 at the new Northwest Maritime Center. Signs are present at the following locations:

1. Point Hudson Marina Office
2. City Dock
3. Adams Street Beach (figure 11)
4. Union Wharf
5. Tyler Street Beach
6. Boat Haven Fuel Dock
7. Northwest Maritime Center Dock

The message in a marine educational sign should be conveyed through a three-part marine environmental philosophy (MEP): environmental knowledge, environmental ethics, and environmental aesthetics. This integrated philosophy can serve as a method for creating or enhancing a sense of stewardship in the audience (Lassiter 2008).

These signs include the project logo, a map showing the extent of eelgrass coverage along the Port Townsend Waterfront, location of the seasonal marker buoys and prominent shoreline features as well as a beautiful full-color illustration of submerged eelgrass habitat and some of the marine wildlife that thrives there.

Project Outreach

Because this project hinges on a boater education strategy, public outreach efforts are key to the project's continued success. In 2009, a video was produced for use at educational venues. Boater education and public outreach efforts were conducted throughout the year. These efforts included:

September 2010

- Leader Insert - Wooden Boat Festival (figure 11)
- Project information booth at Wooden Boat Festival (figure12)

November 2010

- Project presentation to Kingston Yacht Club– the 13 minute video of the project was shown.

April 2011

- Leader Visitor Guide – full color 3-block (3 column x 33 pica) display ad featured project map & logo with descriptive text
- Project information booth at Earth Day Events
- Project video shown at Salmon Recovery Board Conference

Permits & Authorizations

In 2005-2007 permits and authorizations were updated as necessary. A long-term conservation lease with WDNR was perfected thus eliminating the need to update every three years.

The list of required permits and status follows.

<u>City of PT – Shoreline Substantial Development Permit Exemption</u>

- 6-8 seasonal marker buoys, removed during winter & reinstalled each season
- Permit issued 12/12/03, no expiration unless activities not conducted

<u>US Army Corps of Engineers – Nationwide Permit 1 Aids to Navigation</u>

- 8 anchor buoys, remove buoys (detached from anchors) each fall and reinstall each spring
- Use underwater floats &/or neutral density/buoyant lines to prevent scour
- Scope of line must be no greater that the distance from the bottom to tidal elevation 14 feet above MLLW (that is 2 feet greater than the elevation of the Highest Estimated Tide)
- Diver will install each anchor by hand to minimize turbidity
- Mushroom anchors placed 30 feet waterward of the eelgrass
- Preconstruction notification not required
- Permit re-issued 12/17/06 for helical screw anchors

<u>US Coast Guard – Private Aids to Navigation (PATON) Approval</u>

- 8 regulatory buoys operated annually May 1 to September 30
- Approval issued 11/4/03

<u>WDFW – Hydraulic Project Approval</u>

"Anchoring safely and ecologically responsibly is one of the concerns of recreational boaters, especially if they know how an where they may safely anchor" , Steve Lewis – retired Oceanographer, fromer JCMRC member.

Figure 11 - Tyler Street (Pizza Beach) sign

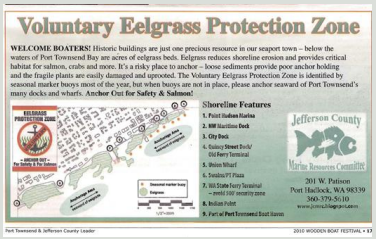

Figure 12 - paid advertisement in the port Townsend Jefferson County Leader - Wooden Boat Festival insert - 2010

Figure 13 - JCMRC booth at Wooden Boat Festival features "Best Boating Practices" pledge & poster give-away

"Without this, people would not realize that there are these eelgrass beds that provide habitat for a lot of marine life", Michael Legarsky – Diver.

- 6-8 seasonal marker buoys shall be installed from May 1 to November 1 of any year
- Copy of project plan shall be onsite during construction/installation
- Buoy should be marked with HPA Control Number (i.e. F9358WDFW)
- Locate buoys a minimum of 30 linear feet waterward of the eelgrass
- Use buoyant line or subsurface float to keep the line from contacting the bottom during low tide cycles
- Subsurface float shall be located 1/3 of the way up from the bottom
- Scope of line shall not be more than extreme high tide depth plus 20%.
- Permit issued 2/2/04, modified 3/8/05

WDNR – Conservation Lease

- Up to 8 seasonal marker buoys will be located May through September
- Helical screw anchors will be placed seaward of the eelgrass beds and may remain in place year-round

Project Continuation

Implementation Schedule

July - August

- Ongoing monitoring
- Update outreach materials for Wooden Boat Festival

September

- Conduct project outreach at Wooden Boat Festival
- Solicit volunteers for buoy removal
- Schedule buoy removal
- Ongoing monitoring

October

- Remove buoys leaving anchors in place
- Transport buoys to over-winter storage

November - March

- Conduct outreach to Yacht Clubs and boating organizations
- Select professional dive contractor for buoy deployment operations
- Reserve advertising space in Visitors Guide
- Obtain all needed equipment
- Repair and/or replace tackle (figure 14)

April

- Conduct project outreach at Earthday venues
- Solicit & train volunteers for photo monitoring

May

- Install seasonal marker buoys to meet all permit requirements
- Begin project monitoring

June

- Reserve space at Wooden Boat Festival
- Reserve advertising space in Wooden Boat Festival
- Ongoing monitoring

Project Expansion

Due to the success of the project, the JCMRC has considered expanding to further protect nearshore eelgrass resources in other locales. In fact the JCMRC's Strategic Plan identifies eelgrass protection as one of its objectives. One option discussed in early planning stages is to extend eelgrass protection south to the Boat Haven to include the eelgrass habitat south of the current project area. While boat anchoring activity is less intense in this area, the data shows such activity is present on a regular basis. Other areas where anchoring activity is more intense, include Mystery Bay, Port Hadlock, Mats Mats Bay and Port Ludlow. However, the on-going maintenance of the Port Townsend project is a limiting factor. Until partners or additional resources to support the effort can be established, the JCMRC will focus its resources on the existing Voluntary No-Anchor Zone and conducting surveys of eelgrass beds in other locations around the county.

Surveys

Over the last eight years the JCMRC has been surveying the shorelines of eastern Jefferson County to improve the knowledge base for eelgrass (Zostera marina) particularly in areas of intense boater use or adjacent upland development. In 2010, the JCMRC focused on Mats Mats bay, Port Ludlow and Discovery Bay.

Figure 14 - Steve Lewis demonstrates how to splice the three-strand line - January 2011

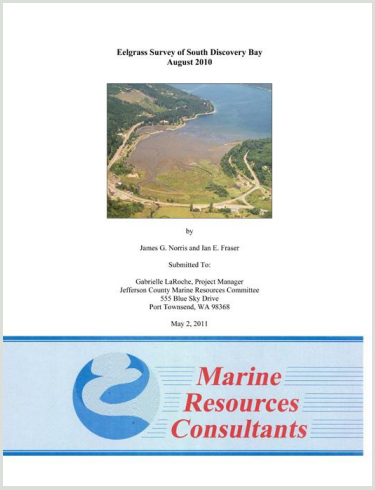

Figure 15 - 2010 survey results analyzed by Marine Resource Consultants - May 2011

Figure 16 - Discovery Bay survey results - 2011

In addition to underwater videography conducted by Jim Norris, Marine Resource Consultants of Port Townsend, additional data were collected using side scan sonar. The side scan sonar (SSS) data acquisition was conducted by Blue Water Engineering Services, Inc. of Port Townsend, WA. The SSS is an effective tool to "fill in the details" between the Norris method track lines. The Norris method runs track lines in a quasi-sine wave across the near and far edges of eelgrass beds, and only detects data directly beneath the survey boat. The amplitude of their quasi-sine wave can vary from hundreds to over 1000 feet. The SSS data can fill in the gaps between their track lines. Data from these surveys was used to develop maps of eelgrass beds in each of these locations.

Mystery Bay

In 2008, the JCMRC began working with the Jefferson County Department of Community Development (JCDCD) to coordinate moorage management efforts in Mystery Bay. The JCDCD's concerns were improperly installed mooring buoys, unpermitted mooring buoys and potential shellfish bed closures. Although the JCMRC interest was to reduce impacts to eelgrass, the goals of the two were aligned.

By 2009, Washington Department of Health (WADOH) was threatening to close the commercial shellfish operations in Mystery Bay because of the high density of mooring buoys in the inner bay and the threat the associated vessels propose to marine water quality. Through a partnership among numerous stakeholders a Harbor Management Plan was developed and derelict, unpermitted or abandoned mooring buoys were removed. In 2010, with funds from the Northwest Straits Benchmark Account the JCMRC installed marker buoys that delineate a Voluntary No-Anchor Zone in Mystery Bay (see Mystery Bay Benchmark Project Summary Report, 2010). In 2011, signage addressing both shellfish harvest and eelgrass resources was installed at the Mystery Bay State Park (figure 17).

The mean maximum eelgrass depth in Mystery Bay is -7 ft MLLW (Norris, Marine Resource Consultants, 2007). Elsewhere in Jefferson County eelgrass beds typically extend to -17 ft MLLW. It is likely that the intense anchoring and improper moorage practices in Mystery Bay have damaged the sub-tidal resource. The management actions taken in Mystery Bay will not only ensure that tribal and commercial shellfish harvests can continue, but will have the added benefit of providing an environment in which eelgrass beds may recover.

Project Partners

In early 2010, former JCMRC Eelgrass Committee Chair, Mike Porter solicited the involvement of the East Jefferson Fire and Rescue (EJFR) Department in buoy deployment. EJFR owns a vessel and has a diver on staff. They are interested in assisting the JCMRC with the installation and removal of the buoys on an annual basis as a training opportunity.

EJFR continued to provide a vessel, diver and assistance with the project throughout 2010 and into 2011(figures 18-19). The JCMRC coordinates deployment and removal; provides logistics, shore support and a deckhand; and hires a buddy diver. The partnership greatly reduces the cost to the JCMRC of buoy deployment and removal and provides EJFR with a hands-on, on-the-water, training opportunity,

Funding

The JCMRC has enjoyed stable funding for this and other projects over the last eight years. In June 2011, we learned that there is no funding provided for the Northwest Straits Initiative in NOAA's FY 2011 spending plan.

The JCMRC has reduced costs through partnerships. Nevertheless, even basic maintenance of the Voluntary No-Anchor Eelgrass Protection Zone requires equipment cleaning, maintenance, repair and over-winter storage, as well as, coordination, logistics, shore support and a second diver for seasonal deployment and removal. Beyond that, vessel monitoring, education and outreach elements all have a cost. Finally, protection of eelgrass in other areas of the County requires a comprehensive knowledge of the extent and location of the resource which can only be obtained through surveys.

Three budget scenarios addressing the various elements of the project are presented in appendix C.

Conclusion

The marker buoys have dramatically changed the behavior of the boaters anchoring along the downtown Port Townsend shoreline. The Voluntary No-Anchor Zone has nearly eliminated negative

"This is a great thing. It's educating boaters to stay out a little further where there's good holding ground", Chris Hanson – Diver & Sailor

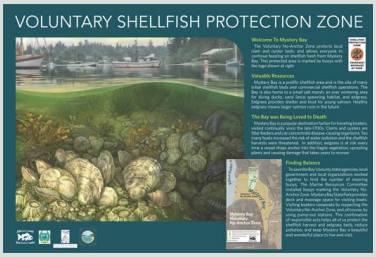

Figure 17 - Mystery Bay signage, installed in 2011, addresses protection of both shellfish harvests and eelgrass beds

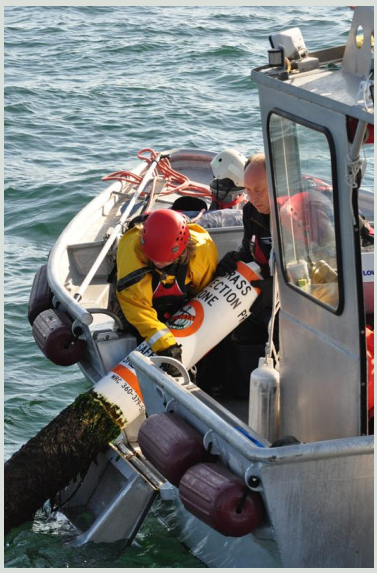

Figure 18 - EJFR hauls the buoy aboard "Volunteer", October 2010

Figure 19 - EJFR gears-up at Boat Haven, May 2011

impacts to the sensitive eelgrass habitat from anchoring. Further monitoring and project continuation and expansion are warranted as resources and project partners become available.

2011-2012 is going to be a lean and challenging time, but we look forward to finding creative solutions. Projects like the Voluntary No-Anchor Eelgrass Protection Zone are important and well respected by our partners and communities.

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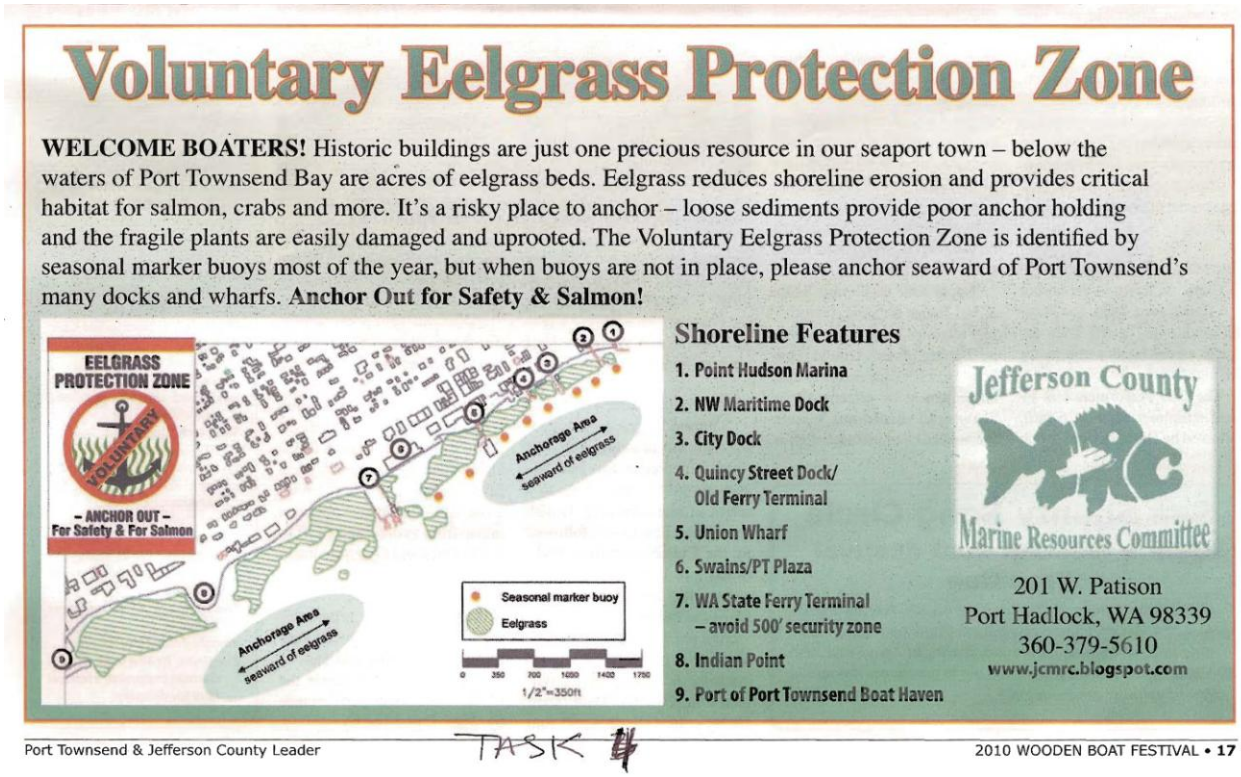
Appendix A: Volunteer Hours

Dock-line photo monitoring 2010	9 hrs
Wooden Boat Festival staff	24 hrs
October buoy removal & cleaning	32 hrs
Earthday staffing @ 2 events	16 hrs
Buoy rigging	24 hrs
Buoy installation	50 hrs
Dock-line photo monitoring 2011	10 hrs
Total	**165 hrs**

Appendix B: Advertising & Press



Voluntary Eelgrass Protection Zone

WELCOME BOATERS! Historic buildings are just one precious resource in our seaport town – below the waters of Port Townsend Bay are acres of eelgrass beds. Eelgrass reduces shoreline erosion and provides critical habitat for salmon, crabs and more. It's a risky place to anchor – loose sediments provide poor anchor holding and the fragile plants are easily damaged and uprooted. The Voluntary Eelgrass Protection Zone is identified by seasonal marker buoys most of the year, but when buoys are not in place, please anchor seaward of Port Townsend's many docks and wharfs. **Anchor Out for Safety & Salmon!**

Shoreline Features

1. Point Hudson Marina
2. NW Maritime Dock
3. City Dock
4. Quincy Street Dock/ Old Ferry Terminal
5. Union Wharf
6. Swains/PT Plaza
7. WA State Ferry Terminal – avoid 500' security zone
8. Indian Point
9. Port of Port Townsend Boat Haven

Jefferson County Marine Resources Committee

201 W. Patison
Port Hadlock, WA 98339
360-379-5610
www.jcmrc.blogspot.com

Port Townsend & Jefferson County Leader TASK 4 2010 WOODEN BOAT FESTIVAL • 17

MEDIA RELEASE

April 25, 2011

Contact: Gabrielle LaRoche, Project Manager

360/531-2458

FOR IMMEDIATE RELEASE

Spring Is Here, the Buoys Are Back

Some people mark the coming of spring with tulips or cherry blossoms, but among the cognoscenti in Jefferson County, spring is heralded by the bobbing of eelgrass buoys. Once again the brightly colored buoys delineate the seaward edge of the eelgrass beds along the Port Townsend shoreline. Installation of the seasonal "No Anchor Zone" buoys marks the opening of the eighth year of voluntary eelgrass protection along the Port Townsend waterfront. The buoys, combined with interpretive signs and brochures, explain the negative impacts of anchoring in eelgrass and encourage boaters to anchor seaward of the eelgrass. The buoys are installed during the peak boating season. The East Jefferson Fire and Rescue (EJFR) Department volunteered the use of its boat, skipper, diver and deckhand for the buoy deployment on April 18th and 25th.

XXXXXXXXXXXXXXXXXXXX

Port Townsend Olympic Peninsula Getaway

Voluntary Eelgrass Protection Zone

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Appendix C: Budget

Eelgrass Protection Annual Budget			
Budget Scenarios	**Bare Bones**	**Maintenance**	**Wish List**
Coordinator/Manager	3,120[2]	7,275[3]	9,500[4]
Eelgrass Surveys & Analysis	0	15,000[5]	33,000[6]
Dive Services	0[7]	960[8]	960
Deployment & Removal Contingency (Boat Rental with captain & dive tender and two divers)	0[9]	0	5000
Wooden Boat Festival Booth rental	0	640	640
Advertising	0	1,200[10]	3,800[11]
Printing/Copying	0	200[12]	600[13]
Equipment/Supplies	100[14]	500[15]	500
Travel	0	100	100
TOTAL	**$ 3,220**	**$ 26,176**	**$ 54,100**

[2] Coordinates overwinter storage, transportation, annual buoy maintenance, seasonal installation & removal with associated press releases

[3] Adds event planning; volunteer coordination & training for outreach and vessel monitoring; contract management

[4] Adds targeted outreach and presentations to Puget Sound Yacht Clubs & Boating Organizations

[5] Single location survey with underwater videography adhering to DNR protocols

[6] Eelgrass surveys with underwater videography & side-scan sonar adhering to DNR protocols at multiple locations

[7] Assumes an all-volunteer dive team

[8] JCMRC hires buddy diver

[9] Assumes continued partnership with East Jefferson Fire & Rescue

[10] PT Jefferson County Leader ½ page ads in Visitors Guide & Wooden Boat Festival insert

[11] Advertising in regional publications such as 48 North and/or Puget Sound Boaters Guide

[12]

[13] Outreach materials – reprint brochures and/or update display

[14] Assumes minimal replacement of tackle (swivel shackles and/or thimbles)

[15] Buoy rigging replacement hardware, line, etc.

Appendix D: jpeg images