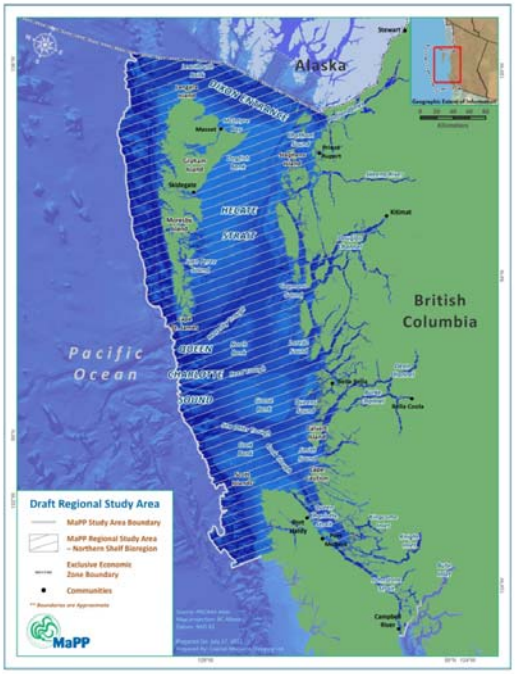


Report for the Marine Planning Partnership (MaPP)
Submitted via Alan Thomson Public Recreation Representative
North Vancouver Island MPAC

"British Columbia's Emerald Sea"
Mapping dive sites in the North Vancouver Island sub- region for inclusion in the MaPP marine resources study and BCMCA database

submitted by Gary Marcuse and Paul Sim for the Underwater Council of BC Photos by Rob Roy and Paul Sim

Acknowledging Provincial and First Nations partners

On behalf of the UCBC, we would like to acknowledge the participation of the provincial government and the participation and interests of the First Nations whose traditional territories overlap with the NVI study area, and to acknowledge the current and historical stewardship of these marine resources by First Nations. We believe that scuba divers can be effective partners with the province and with First Nations in the enjoyment, use and conservation of these marine resources.

The Underwater Council of BC

The UCBC is a non-profit society dedicated to promoting safe recreational scuba diving, environmental protection, and providing a unified voice for recreational divers in BC. The UCBC currently maintains a network of mooring buoys designed to reduce the environmental impact of dive boats.

The Researcher

Gary Marcuse is a member of a working group of the UCBC and a member of the Pescadero Kayak and Dive Club, based in Vancouver. He holds a master's degree in regional environmental planning from Cornell University and is an experienced scuba diver. His company, Face to Face Media, produces documentaries for public broadcast and educational use.

13 March 2013
Gary Marcuse
Face to Face Media
604 251 0770
marcuse@facetofacemedial.ca

Table of Contents

Appendix

Photo credits Rob Roy, Paul Sim

Terms of Reference for study

Determine the location of known scuba diving sites in the MaPP study area, with a focus on the NVI sub region
Provide an overview of diving activity in this region and a description of the sites using maps, photographs and videos
Comments on the potential impact of development on the sites.

Summary and conclusions

Drawing on previous studies and the experience of scuba divers, dive publications, dive operators and marine biologists, more than 120 dive sites have been identified and mapped in the MaPP NVI sub region. Many of these sites are in areas that are recognized internationally as among the best, most pristine and ecologically diverse cold water diving sites in the world.

This dive site information (Appendix 3) has been entered into the BC Marine Conservation Analysis (BCMCA) data base and additional sites will be added over time. Up to date information on dive sites can be viewed on an interactive website maintained by the Living Oceans Society. *www.livingoceans.org/ocean-planning-northern-vancouver-island.*

While a small number of sites can be reached from shore most are reached by boat. The greatest concentrations of dive sites are found around population centres where docks, boat launch ramps and mooring for dive operators are found at Campbell River, Telegraph Cove, Port McNeill and Port Hardy. Other more distant sites are reached by live-aboard dive boats. Altogether these dive sites support a small but significant dive industry that will grow over time.

Exploration of these sites has been going on since the 1960s and dive operators agree that most of the prime habitat within easy reach of these these ports has been found, but new sites in the immediate area and entire new areas further afield are still being explored.

While technical divers may descend to greater depths, the majority of recreational divers are exploring the region between the surface and 140’ (43 metres) where the greatest abundance of marine organisms flourish. This fragile habitat is the marine equivalent of the old growth forests that still remain in the neighboring Great Bear Rain Forest. These ancient sites, hundreds of years in the making, possess exceptional beauty and diversity but they are also very fragile and subject to disruption or destruction from urban and

Photo credits Rob Roy, Paul Sim

industrial pollution and damage from dredging, dragging, fishing, fish farms, log booming, oil spills, and other human activities. In light of their economic and recreational value as tourist destinations for BC and international divers, and their ecological value, these sites should, therefore, be included in the inventory of essential marine resources and be given appropriate levels of protection when assessing current and future competing uses.

Economic and Recreational Values

BC Tourism

"BC is recognized as one of the world's top cold-water dive destinations for its abundant and diverse marine life, relatively healthy marine environment and challenging dive opportunities. There are two principle types of scuba diving access: shore-based and boat based. Boat based dive areas are accessed by private marine transportation, shuttle services or tour operators. Resort lodges may also offer diving services. A 2004 [province wide] survey for the dive BC industry found that 116 diver operators (guides, charters, instructors, equipment manufacturers, wholesalers, and retailers) served about 25,000 divers in 2003 with a gross expenditure on services and equipment of over $15 million."

bcmca.ca/datafiles/individualfiles/bcmca_hu_tourismrec_divesites_atlas.pdf

The Regional District of Mount Waddington

"The RDMW is a world class tourism and recreation destination. The region offers a variety of active and passive recreation opportunities ranging from kayaking, scuba diving, surfing and hiking to visitors from around the world including the US and Europe as well as Canada."

The Globe and Mail

"The waters off Port Hardy, on northern Vancouver Island, are ranked at the top by most divers for their lush and diverse ecology. In particular, the Browning Wall, with its colourful, cold-water bouquet of marine life, is considered one of the best wall dives around. 'It's just the most spectacular dive site that I've seen anywhere in the world,' says Mark Leichnitz, of Vancouver Scuba Diving School." (*Globe and Mail* 23 Aug 2012)

Dive Industry

Diving in Northern Vancouver Island supports two resorts, God's Pocket and Browning Hideaway, two live-aboard operations, the *Mamro* and the *Nautilus Explorer* and several smaller dive operators including Sun Fun divers based in Port McNeill and Abyssal Dive Charters in Campbell River.

Photo credits Rob Roy, Paul Sim

Where the Wild Things Are

Jett Britnell, Divers News Network 2012

"Browning Wall is a dive site that covers a distance of approximately 275 meters. The wall's shear rock face starts about 30 meters above the water line and plunges steeply to a boulder and rubble strewn sea floor that bottoms out at about 40 meters. Browning Wall's precipitous drop off is pockmarked with undercuts and crevices that are jam-packed with a cornucopia of bizarre critters. Large bushel-sized fans of yellow finger sponge punctuate the wall. Amid the abstract chaos, a living tapestry multi-colored sea anemones, spiny red sea urchins, feathery hydroids, lacy basket stars, deep purple hydrocorals and colonial ascidians, prehistoric-looking kelp crabs and gigantic sea stars. Seemingly as unstoppable as a tank, football-sized Puget Sound king crab brandishes its powerful mottled-orange pincers as they trample across the reef. "

Top Rated Cold Water Diving

Each year Scuba Diving magazine, the largest diving publication by circulation, polls more than 6000 subscribers to ask where their top scuba destination is. For the past 3 years the answer has been British Columbia. In past years BC has achieved unprecedented perfect scores of 100 out of 100 in five categories: Top Dive Destination; Healthiest Marine Environment; Top Macro life; Top Fish Life; and Top Advanced Diving. Divers' choice Awards have consistently ranked British Columbia as "the best place to dive in North America!"

Sources *www.scubadiving.com/travel/canada-0*
www.scubadiving.com/travel/caribbean-atlantic/2012-top-100-readers-choice-awards?page=,0,

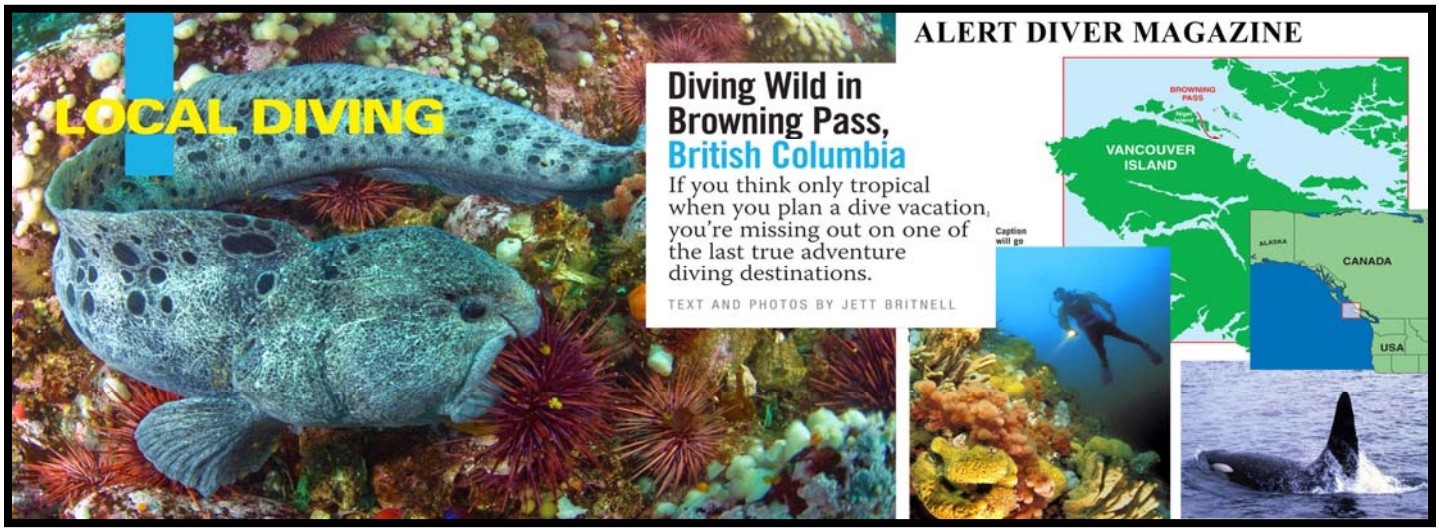
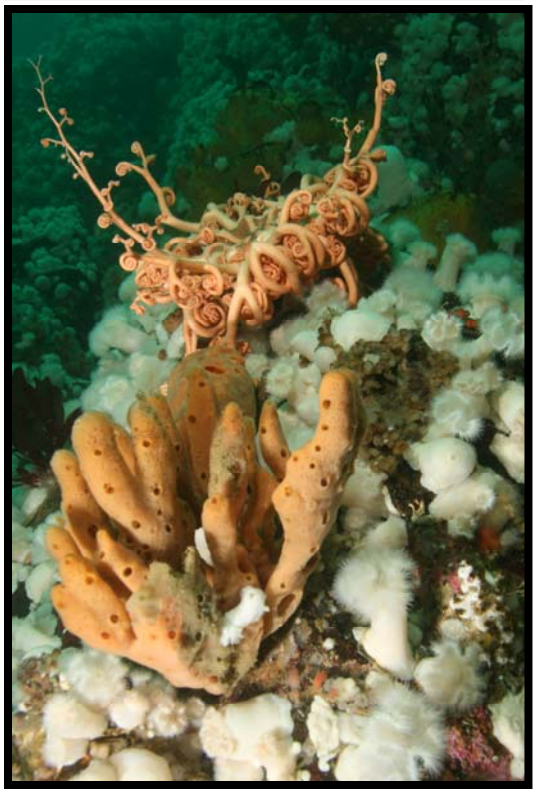


Photo credits Rob Roy, Paul Sim



Ecological Values

Local conditions create world class dive sites

The strong currents, powerful tidal exchanges and rich nutrients that well up from the deep ocean on the north coast of BC provide ideal conditions for the development of rich and diverse marine habitat on the rock walls and reefs that are typical in this region. In a small number of select locations where conditions are ideal, abundant and teeming life covers every square meter. These choice sites, which attract divers from BC and around the world may be quite limited in size, as short as a city block and only as high as an eight story building.

But the conditions that are necessary for a diverse ecosystem are no guarantee that one will develop. Even a few hundred meters away from a lush habitat what appear to be similar conditions may support only a fraction of the life. The reasons for this are not fully understood but where these prime habitats occur they are treasured by divers and marine biologists alike. Divers consistently rate these sites among the top dive areas in North America and the world.

Over the past fifty years scuba diving activities in British Columbia have been steadily increasing. While much of the diving takes place in the readily accessible sites in Howe Sound and the Georgia Straight, divers have also explored and documented a growing number of world class dive sites throughout the MaPP study areas, and in the NVI study area in particular.

In the NVI study area especially, many of these dive sites can only be reached by boat and require experienced guides who are familiar with strong currents generated by the large tidal exchanges in this region. As a result, a small but stable dive industry has grown up in the region.

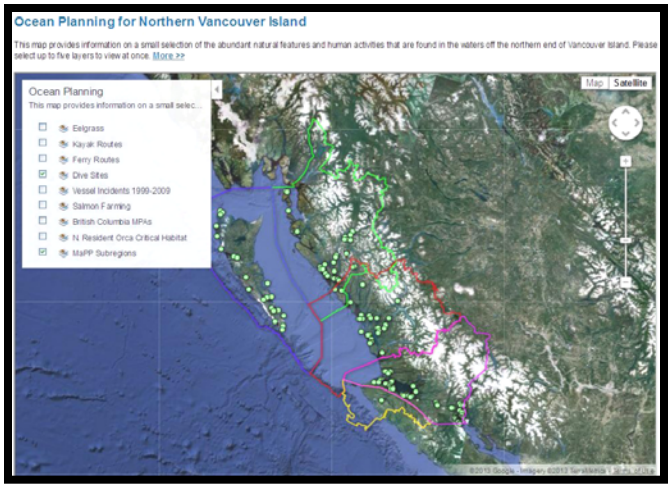
Jacques Cousteau

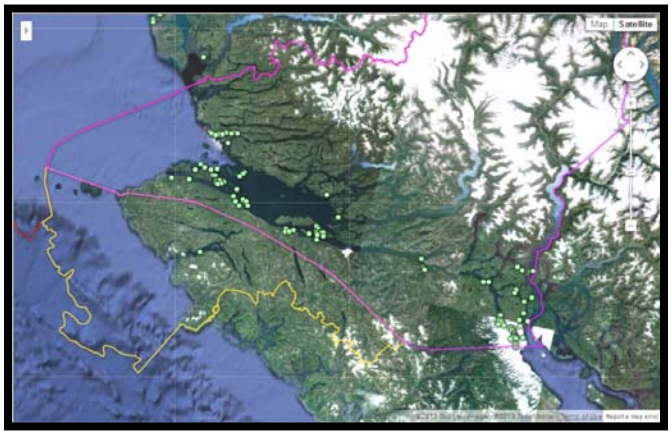
Cousteau is widely reported as saying that the oceans off the coast of British Columbia are … “the best temperate water diving in the world and second only to the Red Sea.”

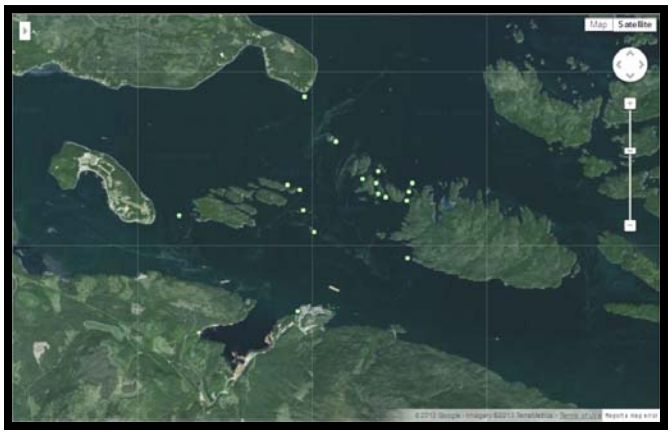
See for yourself

The photographs in the report and the short video included with this report were filmed in the Browning Pass area near Port Hardy and the Plumper and Pearse Islands near Telegraph cove.

Photo credits Rob Roy, Paul Sim







Dive Site Maps
North Vancouver Island sub-region

More than 120 dive sites are currently listed in the BCMCA database for this region and more will be added. See the current listings on the interactive map created by the Living Oceans Society at

www.livingoceans.org/ocean-planning-mapp

Maps from top left *:*
*(*dive sites as of Jan 30 2013 Map source: LOS/Google Earth)

1. MaPP study boundaries and dive sites
2. MaPP NVI sub-region and dive sites
3. Port Hardy area dive sites
4. Telegraph Cove area dive sites

Criteria for inclusion of dive sites
The sites are diverse and include reefs, walls, kelp beds and shallow bays. The dives shown on the LOS map include four general kinds of dive sites.

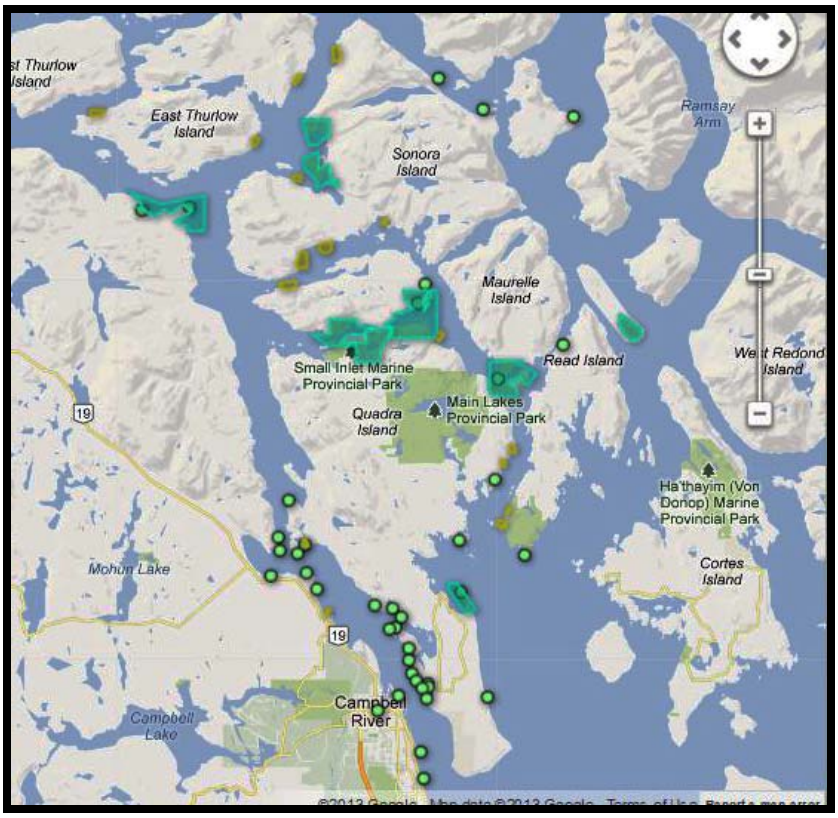
1. Easily accessible shore dives. These are uncommon and noteworthy They are economical relative to boat diving, and are especially useful for local recreational diving and dive training. Even where marine life is less abundant, the sites are still popular, even among experienced divers.

2. Dives easily accessible by boat from nearby port facilities or dive resorts. The economic barriers are higher for these dives with a cost per dive in the $50 to $100 range. Expectations, relative to shore dives, are therefore higher. Some dives feature wrecks; most feature abundant marine life.

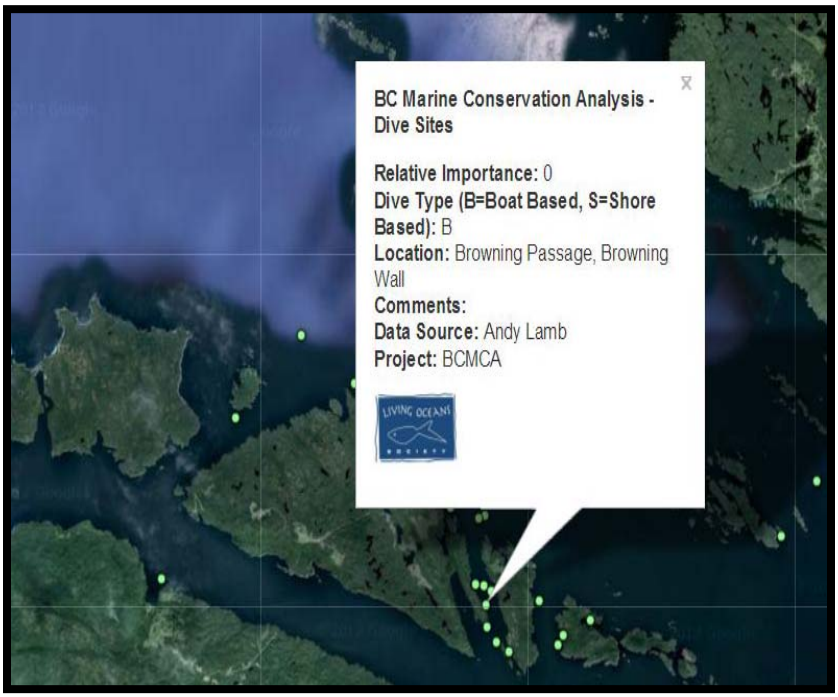
3. More remote dive sites. These sites, more than an hour or two from port, are usually visited on live aboard boats. As the cost per dive increases, so does the expectation that site will be exemplary.

4. Exploratory dives. Some infrequently visited sites, documented by Pacific Marine Life Surveys as part of their database of 5000 dives in BC, are included as they indicate areas of exceptional marine habitat.

Photo credits Rob Roy, Paul Sim



Above: Campbell River area dive sites and BC marine parks



Diving Campbell River
by Roy Mulder

Campbell River has been a popular destination for many years. The fast water and good visibility lend themselves to recreational divers. I spent years exploring areas like Whiskey Point (resident wolf eels), The Gorge on Cortez (an amazing field of strawberry anemones), Uganda Reef (wolf eels, octopus), Surge Narrows (spectacular feather dusters), and Guide Islet (sea lions), to name but a few. There has consistently been a dive shop to service the recreational divers, and there is convenient moorage and other amenities that draw divers. Local charter operators have done a great job of discovering the best areas. Likely there are many more that have yet to be discovered.

Dive Site Information Balloons
Dive site: Browning Wall near Port Hardy

This information, resident on the BCMCA database, provides a basic description of the site. Data collection, which dates back to 1990, is not uniform. Most dives, for example, were not rated for their 'relative importance'. Where ratings do appear they are a subjective assessments of a site's ecology, diversity, accessibility, fun, unique features etc. The scale is from 1 (low interest) to 5 (high interest.) 0=unrated. Sites that are visited regularly would presumably receive high ratings.

See the current LOS map for the latest representation of the BCMCA database. See Appendix 3 for a sample print out of the BCMCA dive site database.

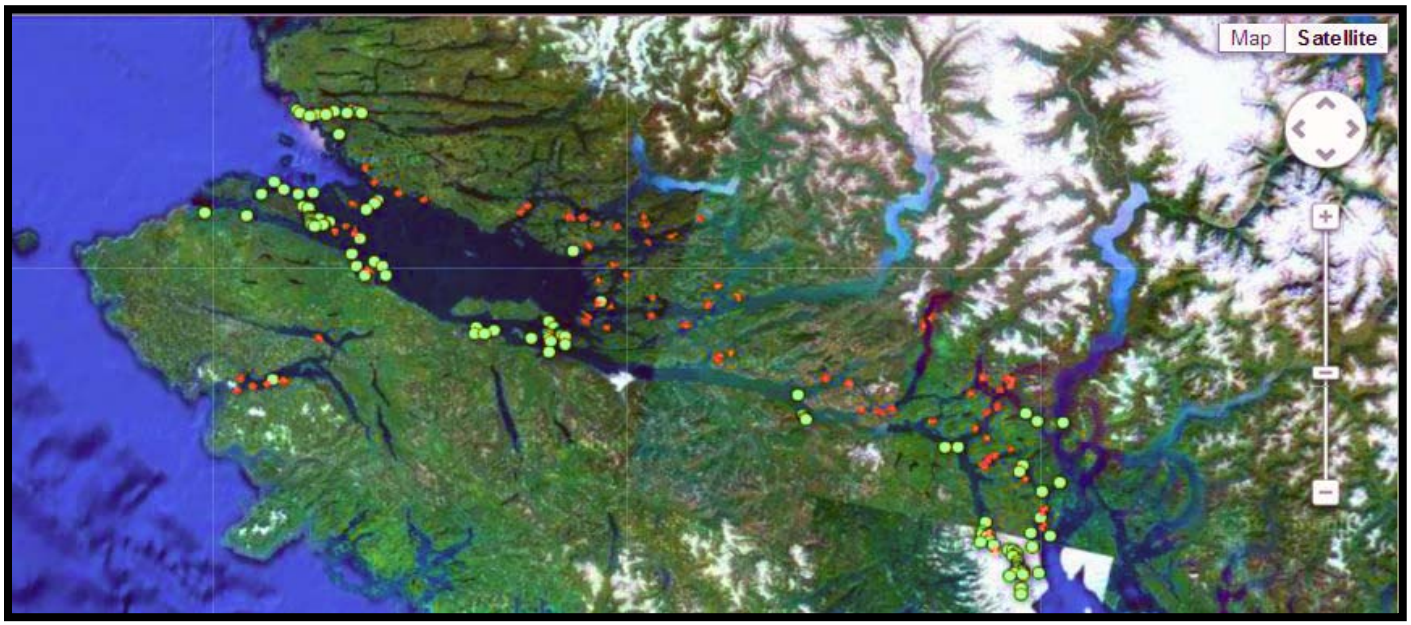
Photo credits Rob Roy, Paul Sim

Conflicting uses create need for education, regulation and enforcement

The exceptional marine habitat found at dive sites is vulnerable to degradation from industrial uses including fish farms, log dumps, sewage outflow, dragging, trawling and dumping. Derelict fishing gear such as traps and snagged lines can damage reef habitat and may affect some species. Steel fishing line is also serious hazard for divers. Commercial and sports fishing may also damage the habitat and deplete rockfish populations even where they are protected by regulation.

Spear fishing of many species is allowed and to some degree is more desirable than net fishing as the divers can be more selective. However dive clubs, which tend more toward conservation than consumption, have few dive fishers as members. The North Island Econauts association, for example, has a strict "no take -- no touch" policy.

The provincial government has established marine parks – above the waterline—and DFO has established rockfish conservation areas (RCAs) below the surface. But divers offer numerous stories about fishermen poaching on these sites, setting lines outside the RCAs and drifting in or "accidentally" catching rockfish while fishing for halibut. Some species like the yellow eye rockfish may live more than a century and are most productive in their 60s, so the casual destruction of these populations despite the creation of RCAs is a concern.



Dive sites (green) and fish farms (red) favour similar sites. Source LOS

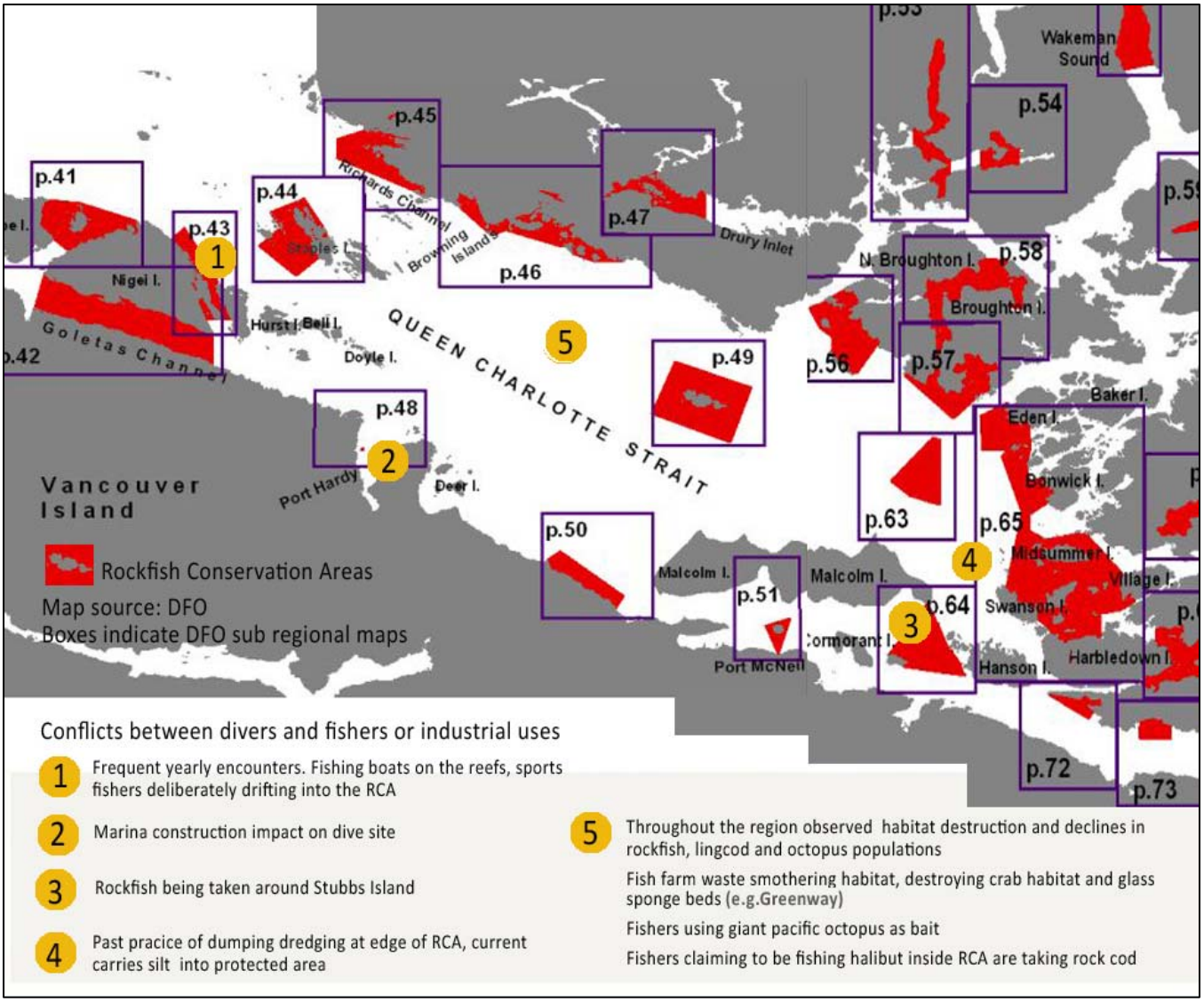
Conflicts will increase with time

As the area becomes more popular, construction of vacation homes and marinas like the one at Bear Cove, will put additional pressure on marine habitat. A shortage of pump facilities for recreational boaters and the resulting dumping of sewage waste—along with chronic oiling from accidents and spills—will also accumulate over time. Intensive use by divers can also cause damage which can be minimized by diver education and proper training. In all of these areas, education and regulation will be needed. Dive organizations can help.

Photo credits Rob Roy, Paul Sim

Rockfish Conservation Area enforcement one of several concerns

Existing protection measures are limited to provincial marine parks and rockfish conservation areas. Based on diver's accounts, these sites are poorly policed and while some local rockfish populations are recovering, the overall populations of rockfish, lingcod, octopus, abalone, and many shellfish continue to decline. Physical damage from nets, draggers and other industrial uses remains a threat.



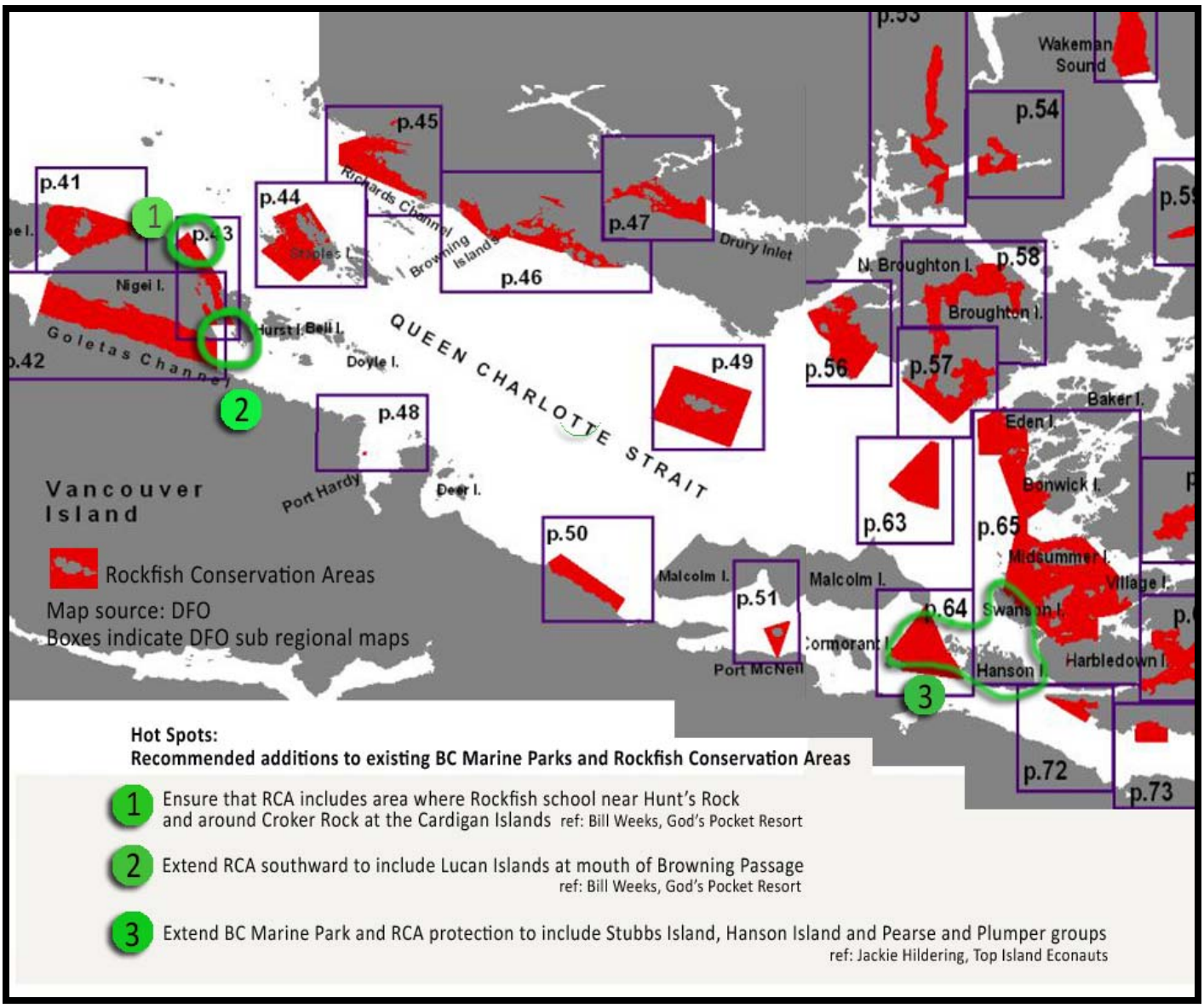
In looking back on old VHS videosfrom the 1990s there is a noticeable decline in rockfish as well as lingcod. We have also seen footage taken back in the '70's that would make you cry. The rockfish population looks almost nonexistent compared to back then.

Bill Weeks, God's Pocket Resort

Photo credits Rob Roy, Paul Sim

Hot Spots need greater protection

Based on the quality of the habitat, intensity of use, proximity to population centres and conflicts with other uses, these areas are highlighted as needing additional protection.



Hot Spots:
Recommended additions to existing BC Marine Parks and Rockfish Conservation Areas

1. Ensure that RCA includes area where Rockfish school near Hunt's Rock and around Croker Rock at the Cardigan Islands ref: Bill Weeks, God's Pocket Resort
2. Extend RCA southward to include Lucan Islands at mouth of Browning Passage ref: Bill Weeks, God's Pocket Resort
3. Extend BC Marine Park and RCA protection to include Stubbs Island, Hanson Island and Pearse and Plumper groups ref: Jackie Hildering, Top Island Econauts

Photo credits Rob Roy, Paul Sim

Recreational facilities for local divers needed

While the regional district of Mount Waddington includes a number of dive sites in its 2009 and 2011 recreational resources studies, none of these sites are scheduled for improvement.

In a region where shore dives are scarce, local divers have lobbied —unsuccessfully—for the creation of a small park and the provision of facilities at Beach Camp in Port McNeill. They also report that improvements are needed at Bear Cove, a shore dive in the Port Hardy harbour that is also affected by the development of a neighboring marina and installation of an extended breakwater.

Elsewhere in the province and in Washington State, dive sites at Whytecliff Park and Porteau Cove, and across the border at Edmonds and the Keystone Jetty, popular dive sites that offer easy access and conditions suitable for novice divers and dive instruction have been improved by the addition of ramps, stairs, picnic benches, toilets and showers for rinsing gear. The quality of the Bear Cove and Beach Camp sites, located within the municipal boundaries and easy to access, would justify recreational improvements.

A conservation role for divers

Over time individual divers and dive organizations tend to take an increasing interest in conservation. As a consequence, local divers and associations can be recruited to take an active interest in developments affecting marine habitat.

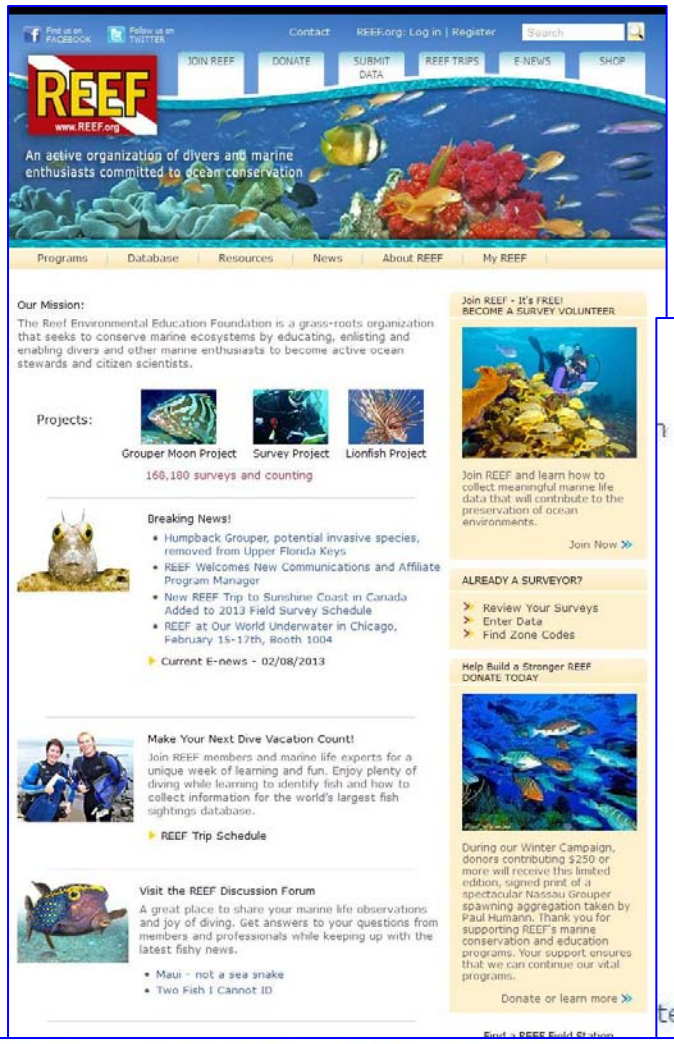
Conservation is the key to recreation and tourism

In many parts of the world the quality of dive sites has been declining from overuse, agricultural runoff and destructive fishing methods. Divers are aware of this and are seeking actively protected and pristine sites. Protecting habitat and making it known that a conservation ethic is supported at all levels will attract divers. This should be recognized in policy making and promotional campaigns. The success of international dive centres like Bonaire (Lesser Antilles) and Wakatobi (Indonesia) demonstrate the effectiveness of policies that protect large areas of rich marine habitat.

Conservation activities in the dive community

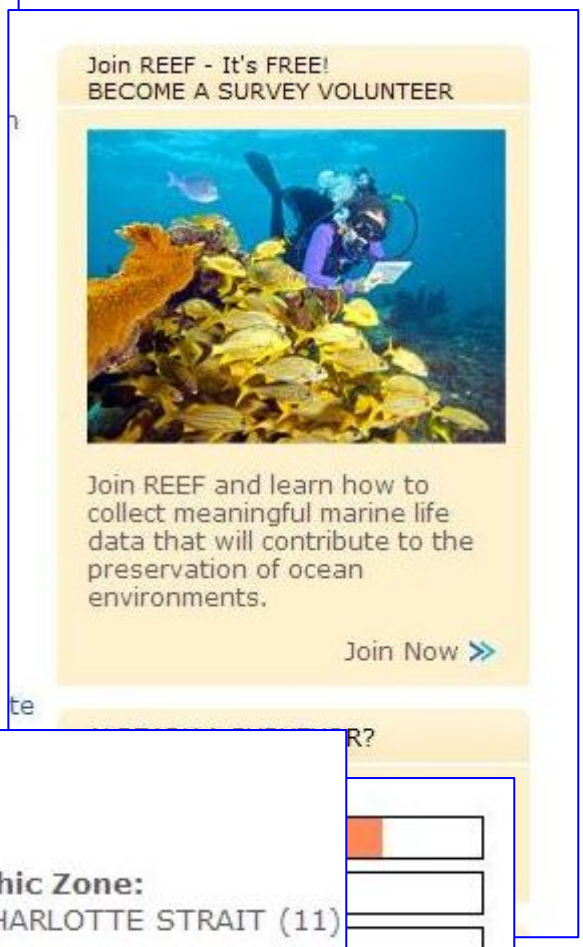
Three examples of conservation efforts by divers (in addition to working on this study) are the REEF monitoring campaign, the dive mooring buoy project, and the publication of a new guide which provides conservation as well as dive information.

Photo credits Rob Roy, Paul Sim



International REEF volunteers monitor dive sites including Queen Charlotte Strait

REEF has data on fish sightings for dozens of BC sites. Dive site index numbers will be added to the BCMCA database



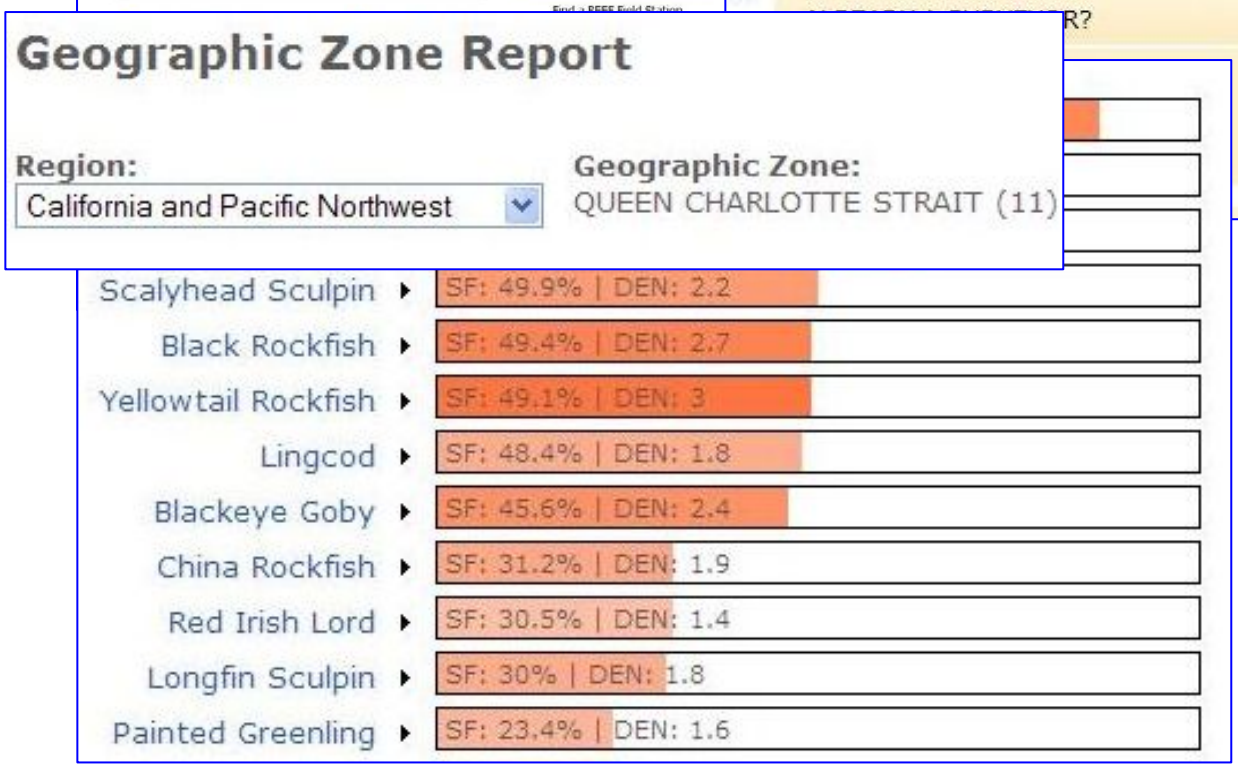
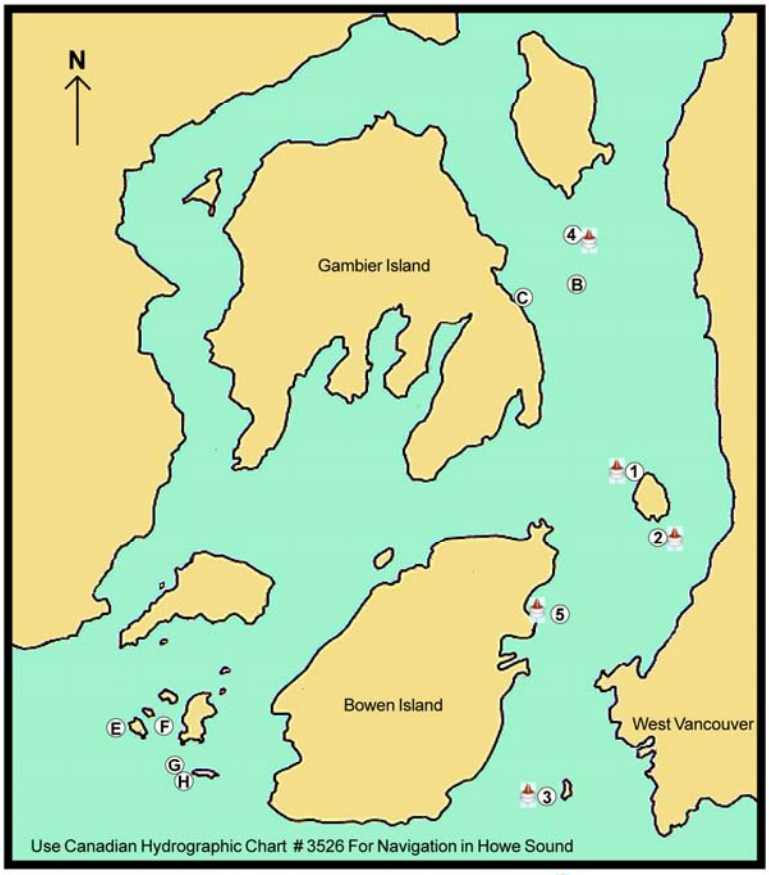


Photo credits Rob Roy, Paul Sim

Underwater Council of BC protects dive sites with mooring buoys

In order to reduce the impact of dive boats mooring on reefs the UCBC maintains this network of mooring buoys on popular sites: another example of conservation ethics and educational efforts by divers.

Howe Sound Reef Dive Sites & Mooring Buoy Locator



NOT INTENDED FOR NAVIGATIONAL USE

All listed diving buoys look like this. Please read "How to Use the Mooring Buoys" on the Locator Cards flip side. **UCBC assumes no liability for the use of the mooring buoys. You are responsible for your vessel.**

Remember to display both of these diving flags when divers are in the water. Never leave an unattended vessel when diving.

Coast Guard: Ch. 16 VHF
***16 cellular**
1 - (800) 567-5111
Police, Fire, Ambulance: 911
(state your location)

Diving Medical Emergency Phone Line
Phone 1 - (604) 875-4111
at Vancouver General Hospital ask for the Diving - Hyperbaric Medicine Physician On Call Phone ONLY for DIVING MEDICAL EMERGENCIES

Divers Alert Network (DAN) divers medical emergencies (call collect) 1-(919) 684-8111

Note: Buoys are available only at sites marked with Buoy Symbols
All dive site rating are for best summer weather and can change rapidly to double diamond with changing weather conditions.

Suitable for All Divers | **Intermediate Divers Only** | **Experienced Divers Only** | **Mooring Buoy at Site**

Rating	Location	Site #	Lat. (N)	Long. (W)	Approx. Depth	Hazards
	Bowyer Is. North Reef	1	49° 25.96	123° 16.50	50 ft	Surface currents, Boat traffic
	Bowyer Is. South Reef	2	49° 24.95	123° 16.14	55 ft	Surface currents, Boat traffic - Heavy in summer
♦	Passage Island Reef N.	3	49° 20.52	123° 18.88	55 ft	Boat traffic, Surface currents, Fishing line, Weather
	Christie It. S.E. Reef	4	49° 29.90	123° 18.06	55 ft	Surface currents, Sudden Strong Winds Winter
	Millers Landing Bowen Is.	5	49° 23.32	123° 19.70	50 ft	Winter Winds, Surface currents, Steep Drop offs
	Proposed Future Installation Sites (No Buoy on these sites at the present time)					
♦	Pam Rocks South End	B	49° 29.15	123° 17.83	25 ft	Rocks, Winter Strong Winds, Weather
	Reef S.E. of Brigade Bay	C	49° 29.01	123° 19.55	40 ft	Surface currents, Boat traffic, Winter Strong Winds
	Reef W. of Popham Is.	E	49° 21.75	123° 29.75	30 ft	Surface currents, Boat traffic, Winter Strong Winds
	Reef E. of Little Popham Is.	F	49° 21.78	123° 28.75	30 ft	Boat traffic, Surface currents
	Reef N.W. of Worlcombe Is.	G	49° 21.10	123° 28.10	30 ft	Boat traffic, Weather, Winter Strong Winds
	Worlcombe Is. S.W. Reef	H	49° 20.95	123° 28.00	25 ft	Boat traffic, Winter Strong Winds, Rocks

Form MBL1B
Ver 1.3 Oct/07

UNDERWATER COUNCIL UCBC OF BRITISH COLUMBIA

Do not leave in direct sunlight

Photo credits Rob Roy, Paul Sim

New dive guides feature conservation, research, protection

This recent dive guide demonstrates a trend toward greater attention to education, conservation and support for conservation measures like the UCBC mooring buoy program.

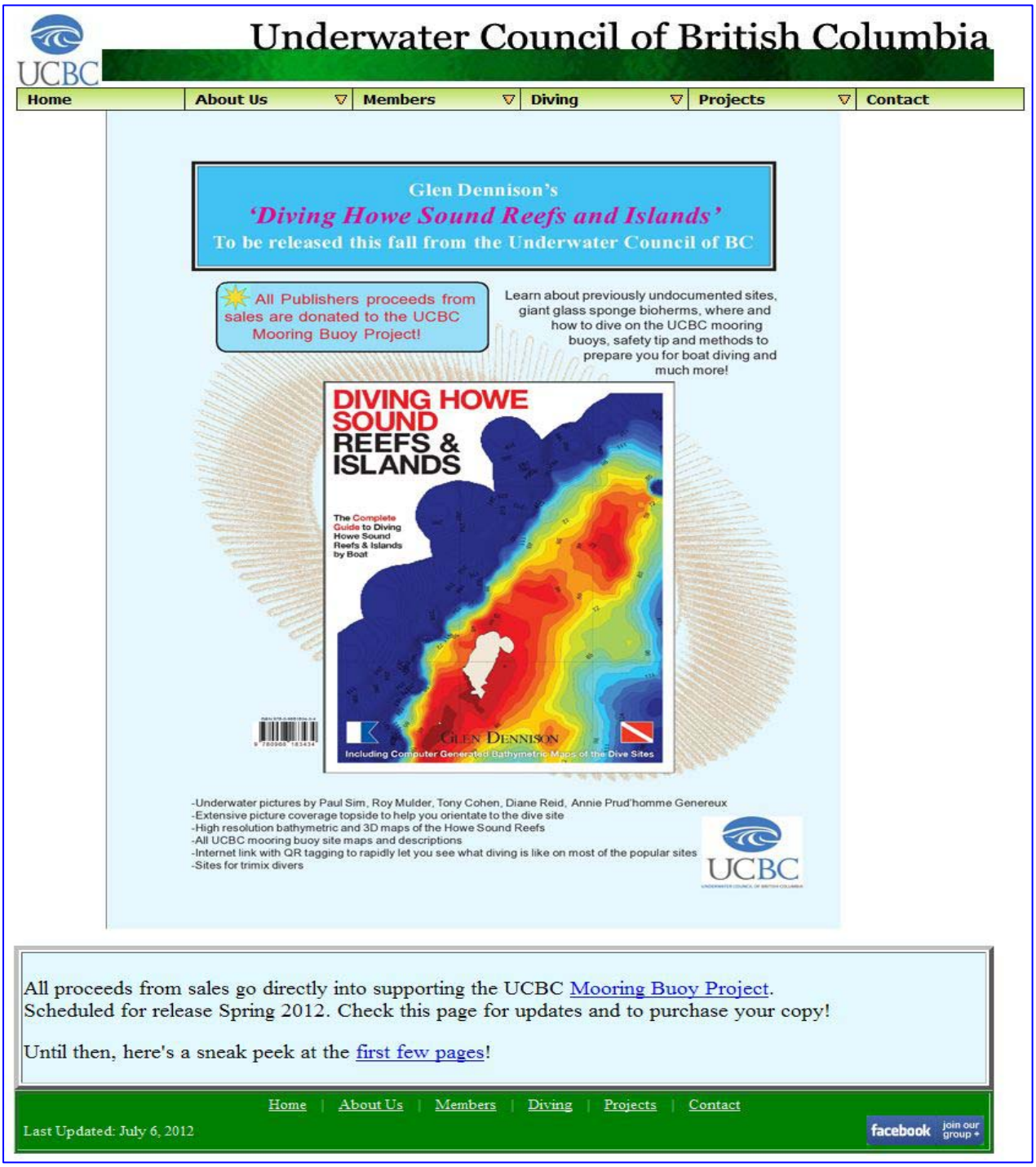


Photo credits Rob Roy, Paul Sim

Appendix

The following PDF files are included in the separate Appendix

1. **List of key sources and studies consulted**
2. **Release of data from this study**
3. **BC Marine Conservation Analysis database for dive sites**
4. **BC Tourism promotion of diving**
5. **Online websites featuring BC dive sites**
6. **International Press Coverage of BC dive sites: articles by Jett Brittnell**
7. **Regional District of Mount Waddington dive site listings**
8. **Membership of the Underwater Council of British Columbia (UCBC)**
9. **Membership of the Dive Industry Association of f BC (DIABC)**
10. **DIABC 2004 Report on the recreational dive industry**
11. **UCBC initial request to MaPP for inclusion of dive site information**
12. **Graphics and Photo Credits, Release of photos for publicity purposes**

Photo credits Rob Roy, Paul Sim