



Puget Sound
RESTORATION FUND

OLYMPIA OYSTER FIELD GUIDE

2013

IDENTIFYING WASHINGTON STATE'S NATIVE
OYSTER AND ITS HABITAT FEATURES

BROUGHT TO YOU BY:
PUGET SOUND RESTORATION FUND (PSRF)

BETSY PEABODY & HANNAH DAVIS



PHOTO © PACIFIC COAST SHELLFISH GROWERS' ASSOCIATION

BOUNTIFUL THANKS TO THE FOLLOWING ORGANIZATIONS
FOR HELPING US DEVELOP AND PRINT THIS GUIDE:

WASHINGTON DEPARTMENT OF FISH & WILDLIFE

WASHINGTON DEPARTMENT OF NATURAL RESOURCES

THE NATURE CONSERVANCY

NOAA

NATIONAL FISH & WILDLIFE FOUNDATION

NORTHWEST STRAITS COMMISSION & FOUNDATION

UNIVERSITY OF WASHINGTON (SEATTLE AND TACOMA)

WASHINGTON SEA GRANT

WASHINGTON SHELLFISH INITIATIVE

WELCOME TO THE WORLD OF OLYMPIA OYSTERS!

THIS PICTURE GUIDE BRINGS TO YOU A CLOSE-UP VIEW OF THE HABITAT FEATURES THAT SUPPORT OLYMPIA OYSTERS IN PUGET SOUND AND SHARES SOME OF THE IDENTIFYING CHARACTERISTICS THAT WILL ENABLE YOU TO SEE OLYMPIA OYSTERS IN THESE VARIOUS HABITATS. OLYS ARE WONDERFULLY CRYPTIC CRITTERS. THEY ARE NOT SHOWY OYSTERS; THEY DO NOT JUMP OUT AT US AS WE AMBLE ALONG THE BEACH OR EVEN MUCK AND POKE ABOUT. IN FACT, THEY BEAR VERY LITTLE RESEMBLANCE TO THE ARCHETYPAL OYSTER THAT MOST OF US HAVE IN OUR MIND'S EYE AS OUR "OYSTER SEARCH IMAGE." ONE HAS TO BE SEARCHING FOR OLYMPIA OYSTERS TO FIND THEM. AND TO SUCCEED IN THIS NOBLE QUEST, ONE HAS TO HAVE SOME KNOWLEDGE ABOUT WHAT THEY LOOK LIKE AND WHERE TO LOOK FOR THEM.

THE CULMINATION OF OVER A DOZEN HAPPY YEARS WORKING IN THE FIELD OF OLYMPIA OYSTER RESTORATION, THIS GUIDE IS DESIGNED TO TRAIN YOUR EYE AND REFINE YOUR SEARCH TECHNIQUES. EQUIPPED WITH THE RIGHT SEARCH IMAGE, YOU TOO CAN SCOUT OUT REMNANT POPULATIONS IN POCKET HABITATS AND KNOW THAT AN IMPORTANT PART OF OUR INTERTIDAL HERITAGE IS STILL PRESENT – EVEN IN LOW NUMBERS.

OLYMPIA OYSTERS HAVE A RICH AND STORIED PAST IN THIS PART OF THE WORLD. THE ONLY NATIVE OYSTER ALONG THE WEST COAST, OLYMPIA OYSTERS ARE TIED TO COASTAL ABUNDANCE STRETCHING BACK FOR THOUSANDS OF YEARS. THEY HAVE FOUNDED INDUSTRIES AND SETTLEMENTS, LAUNCHED CARGO SHIPS UP AND DOWN THE WEST COAST, AND BEEN A LOVING PART OF COMMUNITY AND FAMILY LORE.

A CENTURY OR SO AGO, THEIR NUMBERS DWINDLED SIGNIFICANTLY AS A RESULT OF OVERHARVEST, HABITAT LOSS, AND POLLUTION NEAR SOME IMPORTANT SOURCE POPULATIONS. TODAY, LESS THAN 4% OF HISTORIC CORE POPULATIONS REMAIN. BUT LOYALTY TO THESE OYSTERS REMAINS STRONG AND INTEREST IS RE-AWAKENING.

WITH THIS GUIDE, WE HOPE TO ENTICE OTHERS INTO THE WORLD OF OLYMPIA OYSTERS. OUR GOAL IS TO DEVELOP OUR COLLECTIVE APTITUDE FOR SPOTTING OLYMPIA OYSTERS IN THEIR CHOSEN HABITATS SO WE CAN DOCUMENT THE CURRENT DISTRIBUTION OF OLYMPIA OYSTERS IN PUGET SOUND MORE ACCURATELY. KNOWLEDGE OF CURRENT DISTRIBUTION WILL ENABLE US TO EXPAND EFFORTS TO RE-BUILD SELF-SUSTAINING BEDS OF OLYMPIA OYSTERS THAT PROVIDE AN HISTORIC HABITAT FEATURE IN THE INTERTIDAL AREA.

WE HAVE INCLUDED A COMPENDIUM OF HABITAT TYPES THROUGHOUT THIS GUIDE BECAUSE WE HAVE FOUND OVER THE YEARS THAT OLYMPIA OYSTERS ARE DRAWN TO SPECIFIC HABITAT FEATURES – LIKE LAGOONS, DRAINAGE CHANNELS, SEEPAGE AREAS – RATHER THAN TO PARTICULAR ELEVATIONS. EVEN THOUGH OLYMPIA OYSTERS IN PUGET SOUND ARE GENERALLY SPEAKING A LOWER INTERTIDAL SPECIES, A HABITAT FEATURE SUCH AS A LAGOON MAY BE PERCHED HIGH, AND BE ARTIFICIAL OR NATURAL, AND STILL PROVIDE PERFECT HABITAT CONDITIONS. IN OTHER WORDS, OLYMPIA OYSTERS AND THEIR PREFERRED HABITATS OCCUR AT MULTIPLE ELEVATIONS - WHEREVER THE CONDITIONS ARE SUITABLE. THEY ARE NOT CONFINED TO THE LOWER INTERTIDAL. KEY HABITAT FEATURES INCLUDE MOISTURE, SEEPAGE OR TRICKLING WATER THAT PROTECTS THE OYSTERS FROM EXTREME TEMPERATURES AND, IN SOME CASES, FROM SILT. PROTECTED ENVIRONMENTS ARE ALSO NEEDED, SUCH AS THOSE FOUND NEAR THE HEADS OF INLETS, SINCE THIS IS WHERE HISTORIC CORE POPULATIONS IN PUGET SOUND WERE LOCATED.

PREFERRED HABITAT FEATURES INCLUDE:

- DEEP TIDAL LAGOONS – ARTIFICIAL & NATURAL
- MOIST, FLAT SEEPAGE AREAS OR SEEPS
- PROTECTED COVES
- TIDAL POOLS BEHIND SAND BERMS
- MIX OF SUBSTRATE – SHELL, GRAVEL, SAND, SILT
- CHANNELS DRAINING POOLS, PONDS, LAGOONS
- LOWER FRINGE OF (AND SOMETIMES INTERMIXED WITH) PACIFIC OYSTER BEDS
- STRUCTURE IN OTHERWISE SOFT HABITATS

THERE ARE MANY EXCEPTIONS TO THE RULE WITH REGARD TO BOTH HABITAT AND OYSTER IDENTIFICATION. IN MANY LOCATIONS, OLYMPIA OYSTERS ARE NOT READILY APPARENT ON THE SURFACE BUT ARE HIDDEN UNDERNEATH OBJECTS. FOR INSTANCE THE ROCKY BOULDER SHORELINES IN SOUTH SOUND WILL HAVE OYSTERS ATTACHED UNDERNEATH BUT NONE WILL BE VISIBLE FROM ABOVE. IN SOME SPOTS, EVEN TO AN EXPERIENCED EYE, AN OLYMPIA OYSTER CAN LOOK LIKE A PACIFIC OYSTER AND A PACIFIC CAN LOOK LIKE AN OLYMPIA.

AS YOU FEAST YOUR EYES ON THE FOLLOWING PICTURES AND READY YOURSELVES FOR THE SEARCH, PLEASE NOTE THAT THERE ARE SOME GROUND RULES FOR CONDUCTING OLYMPIA OYSTER SURVEYS AND REPORTING YOUR FINDS.

GROUND RULES: NO COLLECTING OR HARVESTING OF THE OYSTERS IS ALLOWED. ANYONE WHO FINDS WHAT THEY THINK IS AN OLYMPIA OYSTER MUST 1) TAKE PICTURES OF THE OYSTER IN SITU AND THE SURROUNDING HABITAT, 2) RECORD THE GPS LOCATION AND APPROXIMATE TIDAL ELEVATION AND 3) SEND TO BRADY BLAKE AT WDFW, BRADY.BLAKE@DFW.WA.GOV AND BETSY PEABODY AT PSRF, BETSY@RESTORATIONFUND.ORG FOR VERIFICATION.

WITH THAT, LET THE SEARCH BEGIN “AND MAY THE ODDS BE EVER IN YOUR FAVOR!” OLYMPIA OYSTERS EXISTED THROUGHOUT PUGET SOUND HISTORICALLY. LET US GO FORTH AND FIND THEM - NESTLED IN LITTLE POCKETS OF HABITAT THAT STILL PROVIDE THE RIGHT HABITAT CONDITIONS – SO THAT WE CAN WORK TOGETHER TO REBUILD THEM. OUR GOAL IS TO RE-ESTABLISH DENSE AGGREGATIONS OF OYSTER BEDS THAT PROVIDE LIVING STRUCTURE AND ECOSYSTEM SERVICES IN THE INTERTIDAL SO WE CAN HELP MAINTAIN A HEALTHY ESTUARY.

FOR MORE INFORMATION, PLEASE CONTACT BETSY PEABODY, PUGET SOUND RESTORATION FUND, (206) 780-6947, BETSY@RESTORATIONFUND.ORG OR GO TO PUGET SOUND RESTORATION FUND’S WEBSITE AT: WWW.RESTORATIONFUND.ORG

CHEERS TO ALL OF YOU WITH AN INTEREST IN OLYMPIA OYSTERS AND THEIR RESTORATION!

BETSY PEABODY

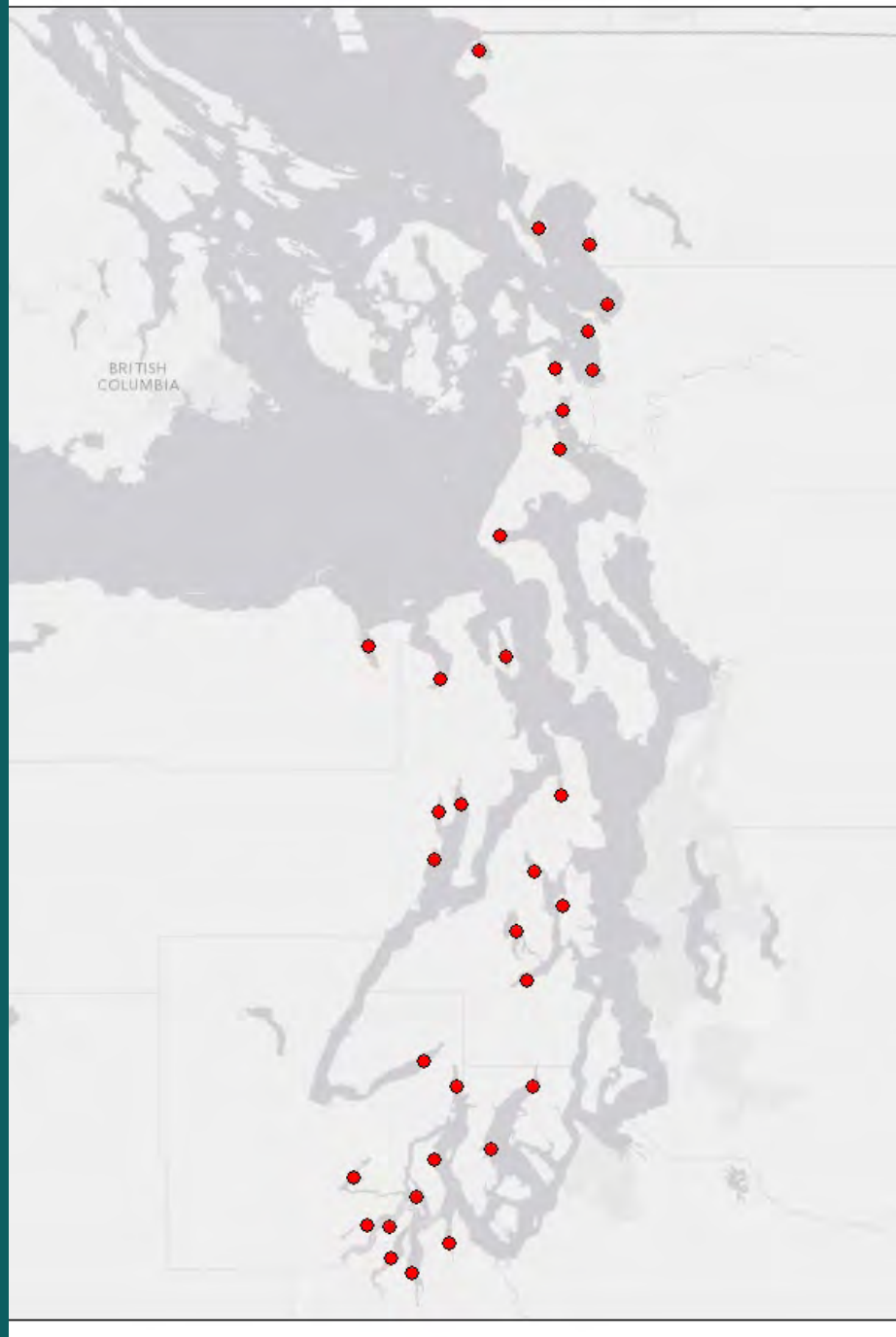
ACKNOWLEDGEMENT:

MANY PEOPLE HAVE HONED MY SEARCH TECHNIQUES OVER THE YEARS, SHARING WITH ME THEIR OWN LOVE AND KNOWLEDGE OF OLYMPIA OYSTERS. CHIEF AMONG THEM ARE CEDRIC LINDSEY, JUSTIN TAYLOR, DICK STEELE, BILL TAYLOR, STEVE BLOOMFIELD, TIM McMILLIN, BRADY BLAKE, BRIAN KINGZETT, DUANE FAGERGREN, JOTH DAVIS, BRIAN ALLEN, PAUL DINNEL, AND HAL BEATTIE. MY THANKS TO BRADY BLAKE FOR ASSISTANCE WITH THIS GUIDE AND TO HANNAH DAVIS FOR FEATS OF DESIGN WIZARDRY.

START DEVELOPING YOUR SEARCH IMAGE



WASHINGTON DEPARTMENT OF FISH & WILDLIFE'S
HISTORIC LOCATIONS OF LARGE OLYMPIA OYSTER
BEDS



WASHINGTON DEPARTMENT OF FISH & WILDLIFE'S
19 PRIORITY AREAS FOR OLYMPIA OYSTER
RESTORATION



NORTH BAY

AN EXAMPLE OF A SUSTAINABLE OLYMPIA OYSTER BED WHERE NATIVE OYSTERS PROVIDE STRUCTURED HABITAT IN THE LOWER INTERTIDAL.



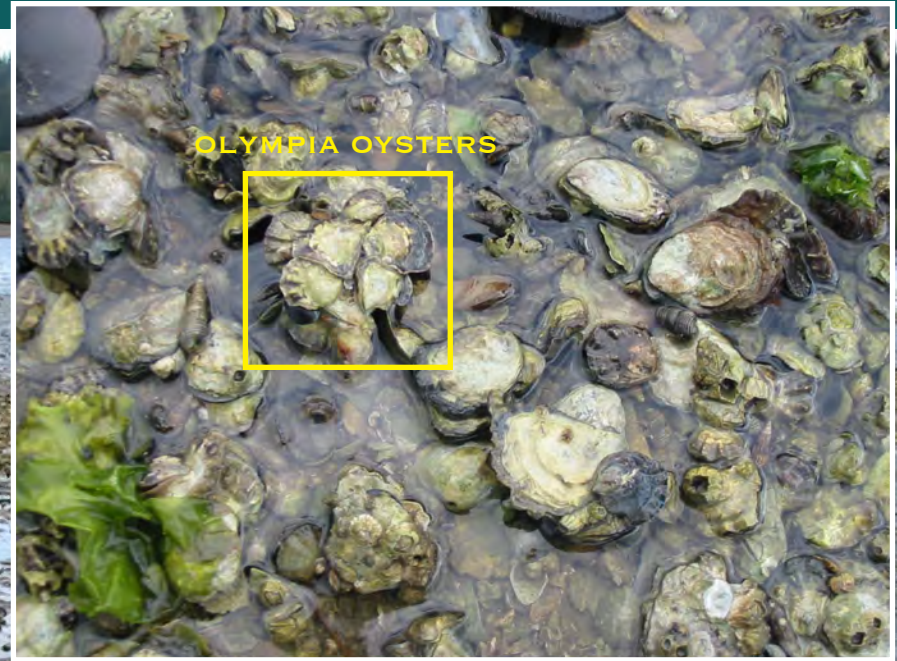
SEAL ROCK - LOWER FRINGE OF PACIFIC OYSTER BED HABITAT



SEEPAGE HABITAT

MOIST, FLAT SEEPAGE AREAS OR SEEPS. SEEPAGE AREAS CAN INCLUDE A MIX OF SUBSTRATES, SUCH AS SILT, SAND, SHELL, GRAVEL. SEA LETTUCE OFTEN COLLECTS IN THESE AREAS AS WELL.



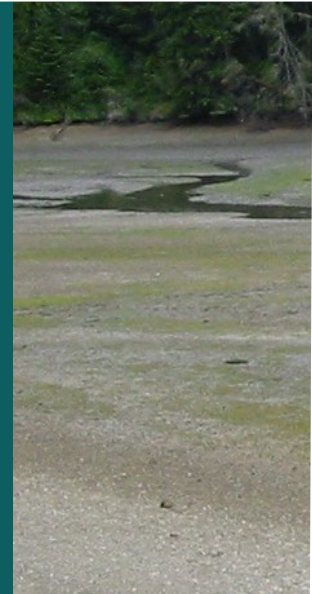


NORTH BAY - BROAD FLAT INTERTIDAL
SEEPAGE AREA NEAR THE HEAD OF AN INLET
WITH FURROWS AND SEEPS.

ELD INLET - PROTECTED, MOIST, FLAT SEEPAGE AREA HABITAT

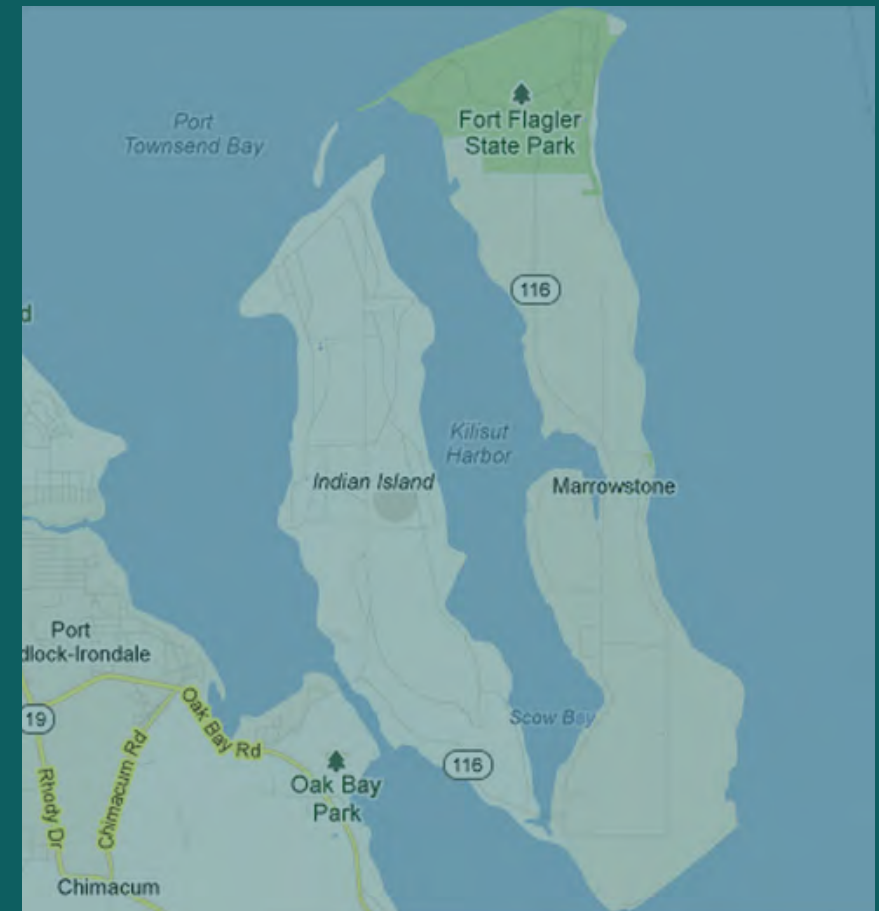


SHELL
ENHANCEMENT



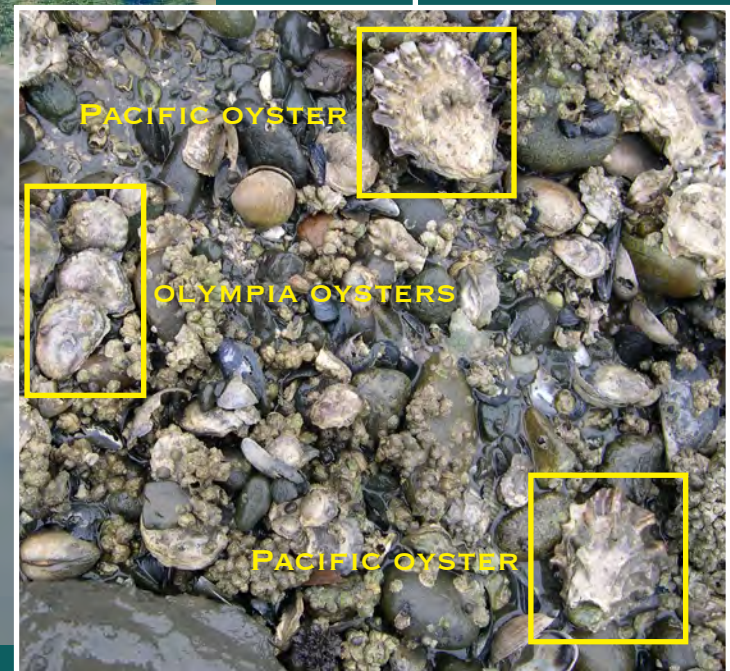
INDIAN ISLAND

EEL GRASS/OYSTER FRINGE . THE HISTORIC CO-OCCURRENCE OF EEL GRASS AND NATIVE OYSTERS IS CLEAR FROM EARLY REPORTS: “THE OYSTERS ARE EITHER COVERED WITH SHALLOW WATER AT LOW TIDE, OR EXPOSED FOR ONLY SHORT INTERVALS, WHILE THE EEL GRASS ACTS AS A STRAINER IN KEEPING THE WATER BACK AND PREVENTING COMPLETE DRAINAGE, OR FALLS OVER AND PROTECTS THE OYSTERS FROM DIRECT HEAT OF THE SUN.” (STAFFORD 1915)

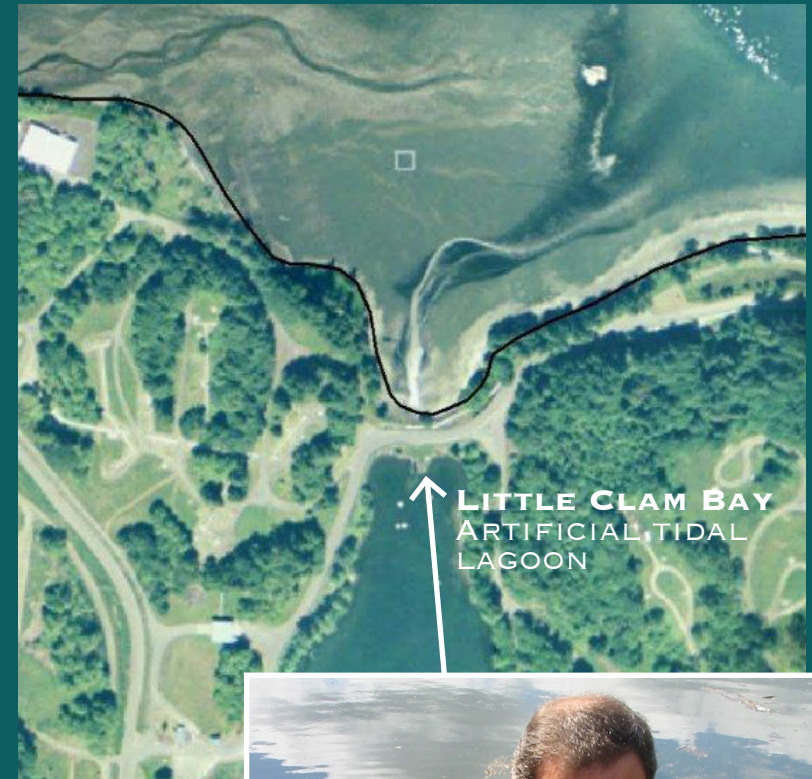


DISCOVERY BAY - MILL POND

ARTIFICIAL LAGOON HABITAT



OTHER EXAMPLES OF LAGOON HABITATS



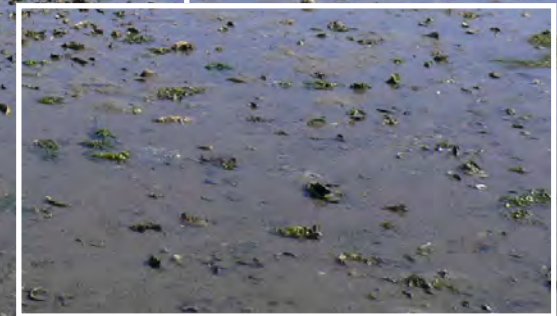
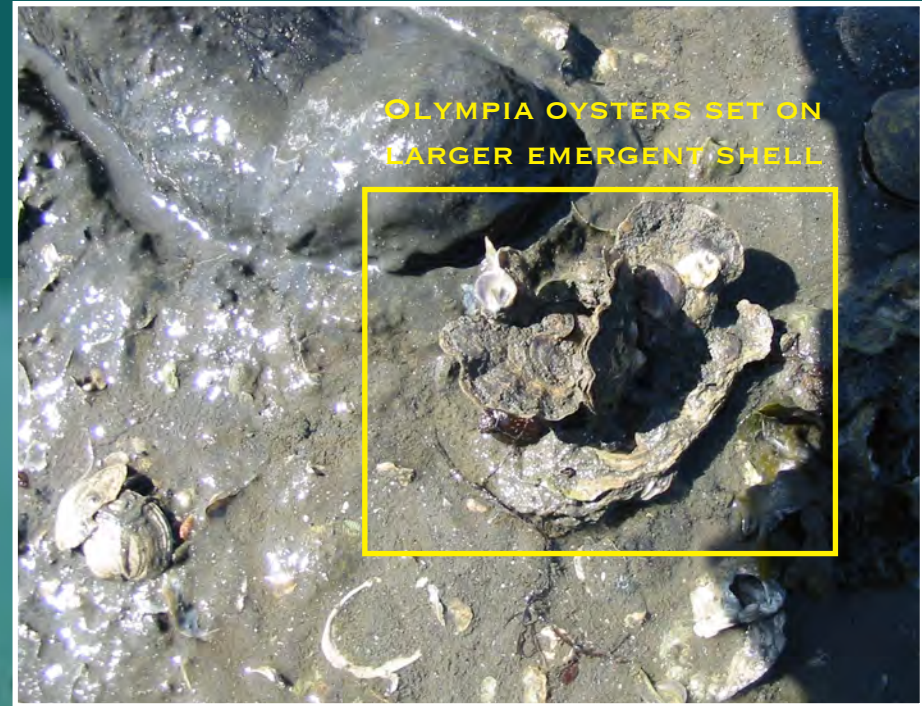
FLETCHER BAY
TIDAL LAGOON/INLET



LIBERTY BAY

MUD HABITAT WITH EMERGENT STRUCTURE

AT THIS LOCATION NATIVE OYSTERS ARE SET ON ALL AVAILABLE STRUCTURE IN OTHERWISE MUDDY SUBSTRATE. THIS INDICATES THAT LIBERTY BAY IS STRUCTURE LIMITED BUT THAT THERE IS PLENTY OF LARVAE TO SUPPORT RECOLONIZATION.





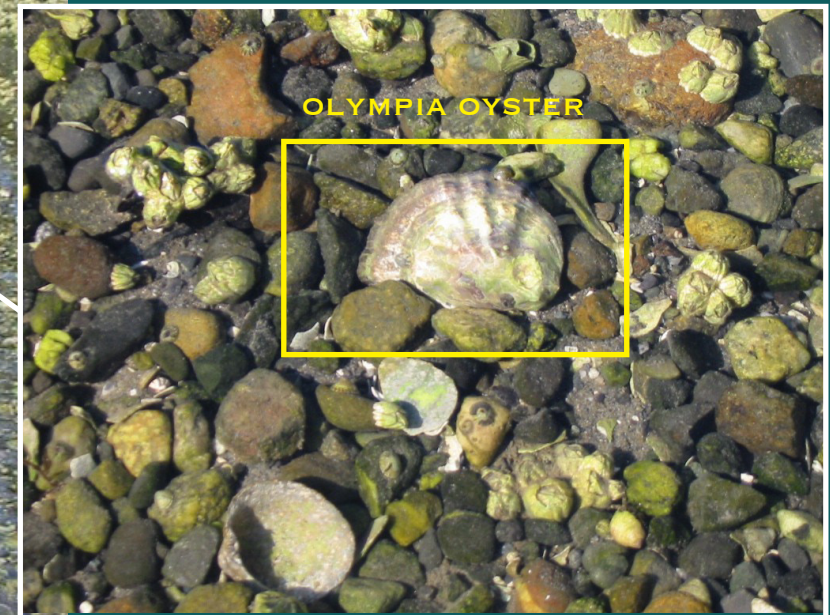
OYSTER BAY

MUD HABITAT WITH EMERGENT
STRUCTURE



DRAINAGE CHANNEL HABITAT

TRICKLING MOVING WATER THAT PROTECTS
OYSTERS FROM EXTREME TEMPERATURE AND
KEEPS SILT FROM SETTLING.



CRANDELL SPIT

DRAINAGE CHANNEL HABITAT

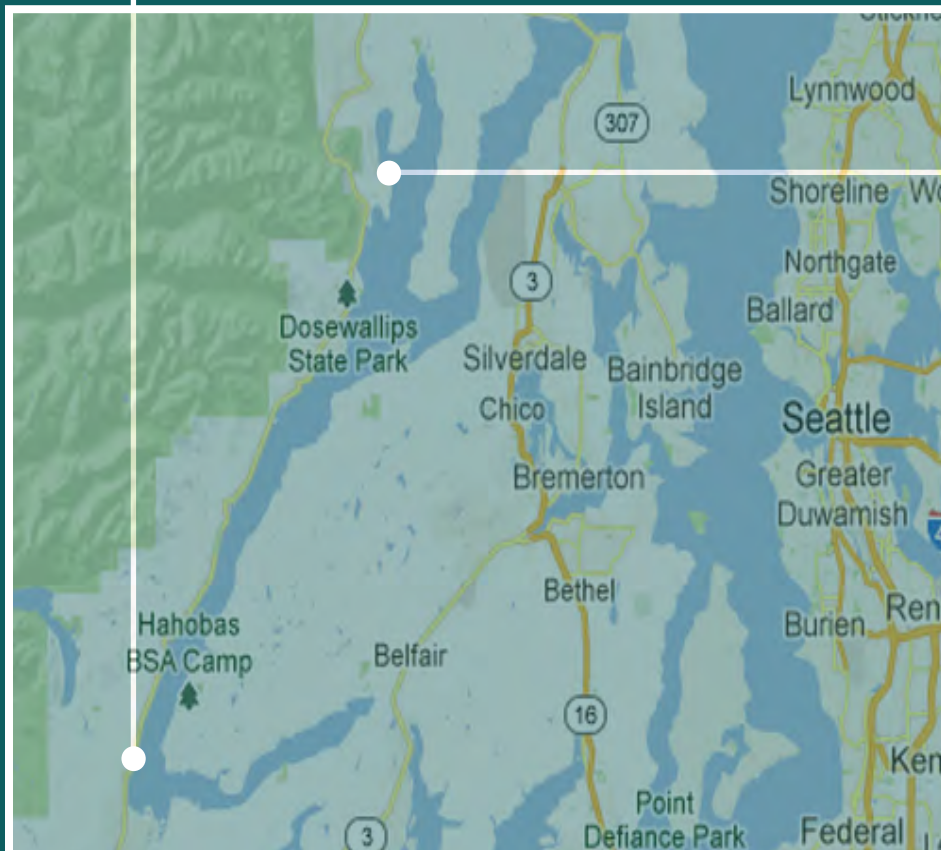


TIDAL POOL HABITAT



POTLATCH AT +3 ELEVATION

TIDAL AREAS PROTECTED BY A GRAVEL/SAND BERM CREATE A HAVEN FOR OLYMPIA OYSTERS.



POINT WHITNEY AT +1 ELEVATION

HAPPY HUNTING

