

SBCLTER UPC (Uniform Point Contact) Protocol

General Notes

General site descriptions and GPS coordinates are detailed in files “SBC-LTER Arroyo Quemado Site Description.xls”, “SBC-LTER Carpinteria Site Description.xls”, “SBC-LTER Naples Site Description.xls” or “SBC-LTER Satellite Site Descriptions.xls” in the “Site Description” folder. The permanent transects at each of the three core sites and six satellite sites are sampled annually in the late-summer to monitor the kelp forest community. Each site has 2-8 permanent 40 meter (m) transects marked at the beginning by either subsurface buoys or tygon tubing. Each transect has six permanent markers (eyebolts or rebar stakes) placed at distances of 0, 8, 16, 24, 32, and 40 m along the transect. Hereafter, the permanent markers (bolts or rebar) will be referred to as bolts. Most transects run parallel to shore from west to east, generally at headings of 80° or 90°. Before sampling is begun, a surveyors transect tape is attached to the 0 m bolt, swum through the eyes of 8, 16, 24, 32, and 40 m bolts of the transect, pulled taut, and attached to the 40 m bolt. Sampling is then begun.

UPC Sampling

The purpose of the Uniform Point Contact sampling is to determine the percentage cover of algae and sessile invertebrates along the SBC-LTER transects. An observer swims the length of the 40 m transect centering a meter stick perpendicular to the transect tape at each meter interval along the transect. He/she then records the species that intersect an imaginary vertical line (operationally defined as a distinct “point” ~2mm in diameter) positioned at each end of the meter stick (n= 80 points per transect) (Figure 1). Additionally, the substrate type under each point is noted. The onshore side of the transect is labeled “L” and the offshore side of the transect is labeled “R”. Frequently, more than one species may be recorded at a single point using this method due to layering of plants and/or animals. The total percentage cover of biota recorded on the transect may exceed 100% using this method; however the percentage cover for any single species on a transect is always less than or equal to 100%.

Materials Needed:

Transect Tape

Dive Slate

Appropriate Data sheets

1M Stick/bar

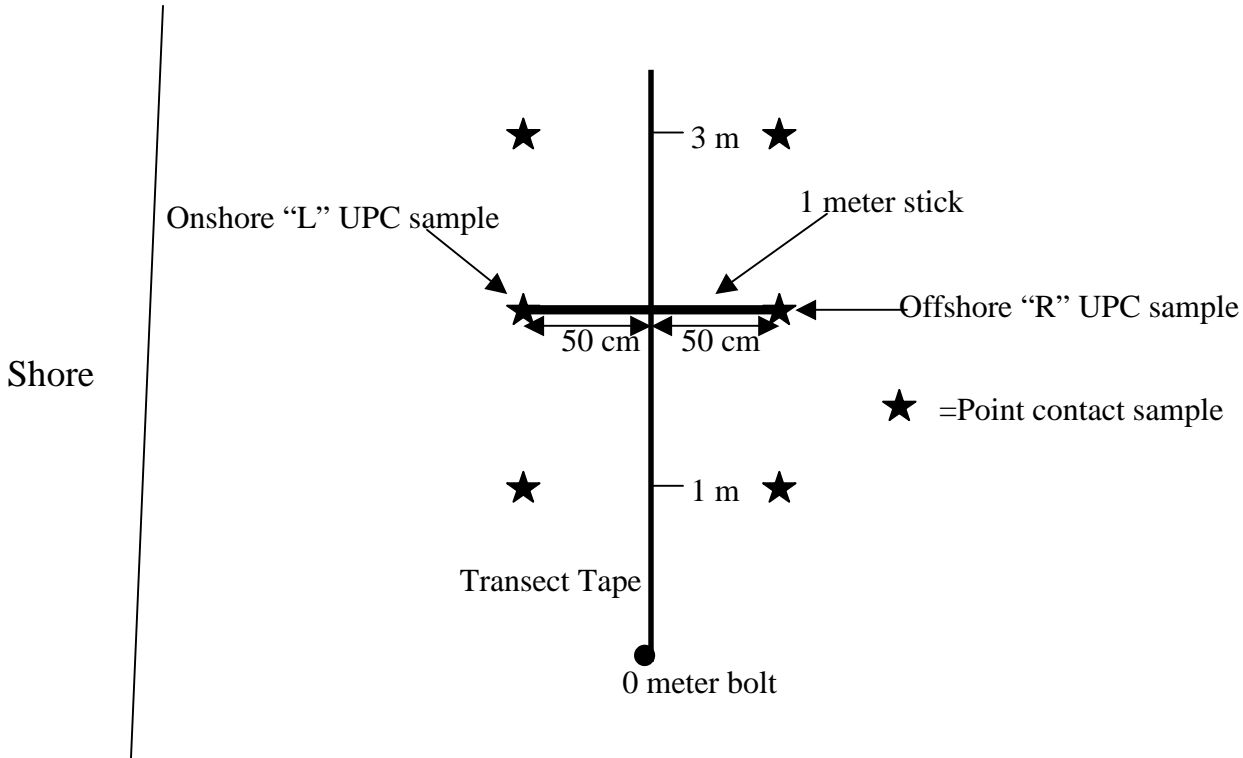


Figure 1. Diagram of Uniform Point Contact points for meters 1-3.

UPC Species List

Below is the current list of the taxa and associated species code recorded in the UPC sampling. Additional taxa may be added as they are encountered.

SP_CODE	GENUS	SPECIES
AL	Astrangia	lajollaensis
ANAR	Anthopleura	artemisia
ANSP	Anthopleura	spp.
AR	Archidistoma	spp.
AS	Aglaophenia	spp.
ATM	Amphipod tube mat	.
AU	Acrosorium	uncinatum
BA	Barnacle	spp.
BAEL	Balanophyllia	elegans
BF	Botryoglossum	farlowianum
BN	Bugula	neritina
BO	Bossiella	orbiana
BR	Blady red	spp.

BRA	Branching Red Algae	spp.
CAL	Calliarthron	cheilosporioid
CC	Chondracanthus	corymbiferus
CF	Callophyllis	flabellulata
CG	Cladophora	graminea
CH	Cystoseira	holdfast
CHOV	Chaceia	ovoidea
CHPR	Chelyosoma	productum
CO	Corallina	officinalis
COF	Codium	fragile
CP	Colpomenia	spp.
CRGI	Crassedoma	giganteum
CUPI	Cucumaria	piperata
CUSA	Cucumaria	salma
CY	Corynactis	californica
CZ	Chondracanthus	spinosus
DC	Diaperoecia	californica
DIOR	Diopatra	ornata
DL	Desmarestia	ligulata
DOFE	Dodecaceria	fewkesi
DP	Dictyota/Pachydiction	.
EA	Eisenia	arborea
EB	Erect Bryozoan	spp.
EC	Encrusting	coralline
ECB	Encrusting Bryozoan	spp.
EH	Egregia	holdfast
ER	Encrusting red algae	spp.
ES	Encrusting sponge	spp.
FB	Filamentous brown	spp.
FR	Filamentous red	spp.
GR	Gelidium	robustum
GS	Gracilaria	spp.
HC	Hymenamphiastra	cyanocrypta
LI	Lithothrix	spp.
LS	Laurencia	spp.
LX	Laurencia	spectabilis
MC	Mytilus	calif.
MH	Macrocystis	pyrifera holdfast
MT	Membranipora	tuberculata
MUCA	Muricea	californica
NA	Nienburgia	andersoniana
NEO	Neoagardhiella	baileyi
OPES	Ophioplocus	esmarki
PA	Phragmatopoma	californica
PACA	Parapholas	californica
PAFI	Pachycerianthus	fimbratus
PAST	Paracyathis	stearnsi
PH	Pterogophora	californica holdfast

PHTO	Phyllospadix	torreyi
PL	Prionitis	lanceolata
PU	Pholad Unidentified	.
R	Rhodymenia	californica
RAT	Red Algal Turf	spp.
SABW	Sabellid worm	.
SAMU	Sargassum	muticum
SC	Sphaciospongia	confoederata
SCCA	Scinaia	confusa
SE	Serpulorbis	squamigerus
SELO	Seytosiphon	lomentaria
ST	Salmacina	tribranchiata
STMO	Stylela	montereyensis
TALE	Taonia	lennebackeriae
TC	Thalamoporella	californica
TEAU	Tethya	aurantia
UBB	Unidentified brown blade	spp.
UEC	Unidentified erect coralline	spp.
UIH	Unidentified hydroid	spp.
UM	Unidentifiable tube mat	spp.
UNAN	Unidentified anemone	spp.
URLO	Urticina	lofotensis
UT	Unidentified compound tunicate	.
UV	Ulvoid	spp.
WK	Weeksia	spp.
ZOMA	Zostera	marina