7 Phylum Scurry
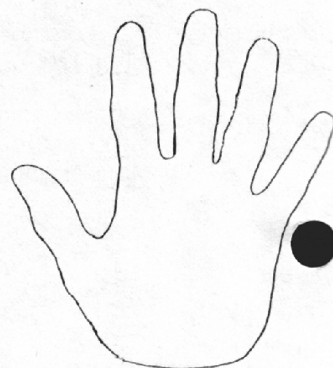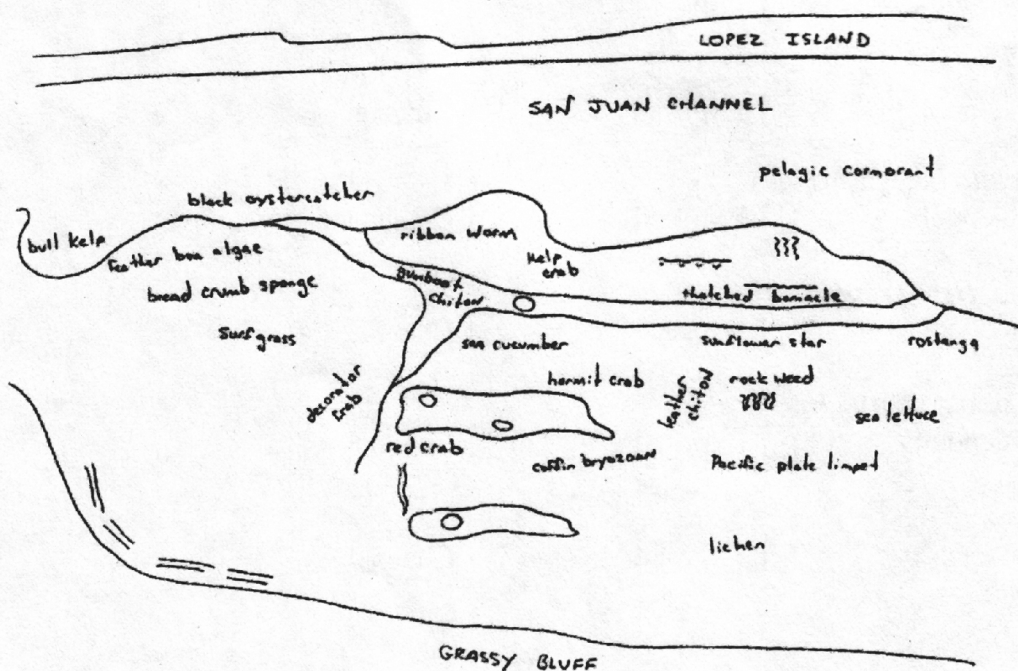## Float Crew

☐ Bread Crumb Sponge, *Halochondria* sp.
        ☐ Green   ☐ Tidepool
        ☐ Purple   ☐ Exposed
        ☐ Yellow   ☐ Channel

☐ Coffin Bryozoans, *Membraniporidae membracea* (encrusting)
        ☐ Tidepool   ☐ Exposed   ☐ Channel

☐ Giant Feather Duster, *Eudistylia polymorpha*
        ☐ Tidepool   ☐ Exposed   ☐ Channel

☐ Hairy Chiton, *Mopalia*
        ☐ Tidepool   ☐ Exposed   ☐ Channel

☐ Hermit Crab
        ☐ Tidepool   ☐ Exposed   ☐ Channel

☐ Black (leather) Chiton, *Katharina tunicata*
        ☐ Tidepool   ☐ Exposed   ☐ Channel

☐ Limpet (not keyhole)
        ☐ Tidepool   ☐ Exposed   ☐ Channel

☐ Keyhole limpet, *Diodora espara*
        ☐ Tidepool   ☐ Exposed   ☐ Channel

☐ Mussel, *Mytylis*
        ☐ Tidepool   ☐ Exposed   ☐ Channel

☐ Dog Winkle, *Nucella* (neogastropod)
        ☐ Tidepool   ☐ Exposed   ☐ Channel

☐ Purple Shore Crab, *Hemigrapsis nudus*
        ☐ Tidepool   ☐ Exposed   ☐ Channel

☐ Decorator Crab (spider crab), *Oregonia* spp.
        ☐ Tidepool   ☐ Exposed   ☐ Channel

☐ Barnacle
        ☐ Tidepool   ☐ Exposed   ☐ Channel

- [ ] Spiral tubeworms, (Spirorbidae), white tubes, red tentacles
  - [ ] Tidepool [ ] Exposed [ ] Channel

- [ ] Porcelain Crab, *Petrolisthes eriomerus*
  - [ ] Tidepool [ ] Exposed [ ] Channel

- [ ] White sea cucumber, *Eupentacta quinquesemita*
  - [ ] Tidepool [ ] Exposed [ ] Channel

- [ ] Nemertean, *Paranemertes peregrina*
  - [ ] Tidepool [ ] Exposed [ ] Channel

- [ ] Orange sea cucember, *Cucumaria miniata*
  - [ ] Tidepool [ ] Exposed [ ] Channel

- [ ] Lined Chiton, *Tonicella*
  - [ ] Tidepool [ ] Exposed [ ] Channel

- [ ] Gumboot Chiton, *Cryptochiton stelleri*
  - [ ] Tidepool [ ] Exposed [ ] Channel

Now that you found most of these critters, how many are there?

You need to estimate (by guessing only) how many SPIRORBIDS there are in a square meter area. Remember where you estimated this number because you will be going back there later.

\# = _____ /m²

LOPEZ ISLAND

SAN JUAN CHANNEL

pelagic cormorant

black oystercatcher

bull kelp

feather boa algae

bread crumb sponge

surfgrass

ribbon worm

kelp crab

gumboot chiton

thatched barnacle

sea cucumber

sunflower star

rostanga

decorator crab

hermit crab

leather chiton

rock weed

sea lettuce

red crab

coffin bryozoan

Pacific plate limpet

lichen

GRASSY BLUFF

BILLIONS AND BILLIONS
Float Crew

"There are billions in this pond."

> --Owen displays his numerary skills at Handy Joe's Crab Den,
> estimating the number of spirorbids. Next he'll be barred from
> Sands Casino for counting cards.

Quadrant Analysis

GOAL: To estimate the number of SPIRORBIDS per meter square.
PROCEDURE: Count the number of SPIRORBIDS in the quadrant.
> Each quadrant is a quarter of a meter, so take the number counted and multiply by
> four. Compare this to your guesstimation and see how well you did.

REASON FOR DOING THIS: To get a better understanding of the biomass at Cattle
> Point.

$$1 \text{ dime outline} \approx 1 \text{ cm}^2$$

$$\text{density of spirorpids} \approx \frac{82}{\text{cm}^2} \times \frac{100^2 \text{ cm}^2}{\text{m}^2} = 82 \times 10^4 / \text{m}^2$$

$$820,000 / \text{m}^2$$