

III. Into the Muck with a Smile and a Plan

As the boat arrives at the study site, Charlie jumps from the bow and guides them to shore. Here the mud is a light brown on the surface and an oily, smelly black underneath. The surface layer seems to shine a lovely golden green in the sunlight and well it might, for growing across the top is a thin carpet of microscopic algae. These single-celled plants are masters at photosynthesis as they trap the sunlight and grow so quickly that a single afternoon can change the look of the mud from dull gray to bright green. Yet, just beneath this lively layer, a dark, black and odorous slime persists where no oxygen can penetrate. Beth recalls how this sticky mud used to stain their clothes when they got in over the tops of their boots. Mary had explained to her how the lack of oxygen only allows certain kinds of bacteria to grow. These so-called anaerobic bacteria can survive where other kinds of life cannot. They breakdown the chemical compounds in the mud and release chemicals rich in sulfur, giving off the odor of rotten eggs.

Fortunately today's work does not require them to stomp around in this sticky goop for long. The job for today is to monitor a recovering salt marsh that was restored two years ago. Will actually worked on the crew 50 years ago that originally built this levee, blocking the tides from flooding this particular marsh. Back then the job was to get the logs from the surrounding hills down to the mill where they would become lumber to build houses for the new families that were moving to the area. Back then, lumber from Oregon was being sent all over the world and no matter how fast it was cut, there always seemed to be a need for more. But many of the hillsides near the bay had been harvested and never replanted, leaving patches where no trees grew. The harvest had been hard on the land as well. Big logs were cut and dragged down the steep slopes until they could be skidded no further. Sometimes, a dam was built to make a pond where the logs were held until the pond was full. Then the dam was blown apart sending the whole shooting match in a big flume down to the water's edge. The mass of logs scraped the soil, trees, brush and everything from the hillside and creek bed until they became jammed somewhere downstream.

Will's job had been to make a landing where the logs could be dumped into the slough and then rafted and dragged by tug boat to the mills down along the bay. The work had been very difficult and the first time he heard that scientists were planning to break apart the levee, he thought they were crazy.

But the more he thought about it, the more sense it made. The marshes had been rich and lush before the levee had been built and the creek had meandered back and forth before they dug a ditch to hold it. As the years had gone by, he had watched the marsh disappear as the cattle mowed it down each season and it stayed flooded for a longer time each winter. In the past few years, running cattle on it didn't even make sense since it cost more to keep the ditch clear and fertilize and seed the field than the money the farmer made off the beef. Now, he understood what had been happening.

When they blocked the tides from flooding the marsh and dug the ditch, they cut off the natural fertilizer brought in by the tidewater. As the marsh plants died and decayed, the surface of the marsh became lower and lower each year, until it was too low and too compacted to grow much of anything. When the farmer, Mr. Oldson, finally gave up and sold the land, it looked more like a wasteland than a farm field.

That had been a hard pill for Mr. Oldson to swallow and Will and Beth understood why. But they had tried to help him to understand what had happened and how restoring the marsh would bring about a different kind of productivity. The farmer liked to fish for salmon and the idea that this “habitat restoration” might help to increase the declining numbers of salmon made him feel a little better.

As Will stepped out of the boat, he reminded Charlie and Mary that they should invite Mr. Oldson back to see how the project was coming along. They all agreed that would be a good idea and hoped that he would approve. Maybe they would even be able to show him some of the data they had collected demonstrating how young fish were using the restored tide channels.

Beth began calling out names of her favorite marsh plants like she was greeting old friends. Many of the plants were just coming up out of the marsh this early in the spring, but a few had pushed above the rest and above the brown mat of wilted vegetation from last year spikes of bright green were emerging. A line of wrack had washed up on the marsh from the previous high tide and much of the drift was made up of drying blades of eelgrass. Will noticed that the young leaves had been cut, and he wondered whether the Brant geese had chopped down the grass or if the dredge had done this.

As the crew began to spread out their gear and lay out the sampling line or transect, Charlie groaned. He realized that he had forgotten to bring his field notebook. Luckily, Mary had included a couple of extra data sheets in her pack. They would have to transfer the data to Charlie’s notebook when they got back which meant a bit of extra work, but at least the expedition was not going to be thwarted. Beth chided that she knew who would be transferring that particular batch of data!

Now the real work commenced with Beth on hands and knees identifying and counting plants within each sample plot while Will recorded the data using the codes that Mary and Charlie had given him. Although the work was repetitive and slow at times, they had to work quickly to stay in front of the rising tide. Charlie and Mary replicated the work along another transect further out in the marsh edge.

After about an hour, it began to rain. The four investigators continued their work uninterrupted, only pausing briefly to pull on rain gear and hats. When the sun came back out, they peeled off the layers. Charlie decided to grab a snack from the boat and as he jumped from the edge of the marsh onto one of the seats, he lost his footing and fell into the shallow water. At first everyone laughed, but then Beth noticed that Charlie was bleeding from a scrape on his arm. Luckily, the cut was not too serious and the first aid kit held just the supplies Mary needed to fix up Charlie’s arm. Never the less, Charlie was embarrassed by his carelessness which would have cost the group valuable field time had it been more serious. He apologized to everyone, knowing that if the trip had been cut short it might have meant a gap in the data and too many gaps would make the whole effort meaningless. As the day wore on, they completed their collection of the data and loaded up to head back to the docks with smiles on their faces and mud on their boots.