Introduction
Mr. Wiedoff introduced the Nearshore Planning team.

Review of Meeting Objectives, Agenda, & Ground Rules
Mr. Wiedoff reviewed the meeting objectives, which were displayed on the wall for the duration of the meeting.

- Identify research and monitoring needed to make most appropriate management decisions based on key data needs and knowledge gaps identified in public meetings.

- Prioritize research and monitoring needs based on:
  1. need for management decision making
  2. feasibility

- Identify partnerships and funding sources

Mr. Wiedoff reviewed the ground rules, emphasizing that ODFW values local knowledge and encouraging citizens to share their experience and wisdom. The ground rules for the meeting include:

- Start and stop on time,
- Focus on meeting objectives,
- Respect diverse experiences and opinions,
- Everyone can participate,
- One speaker at a time,
• Cell phones off, and
• Notes will be taken and made available.

Presentation
Mr. Wiedoff presented information about the Nearshore Strategy. Cristen Don explained how the Nearshore Planning Team developed the Strategy Species List (species of greatest conservation needs) and its’ linkage to the list of categorized threats identified in the first series of public meetings (see meeting notes for first and second series of public meetings). The group proceeded to identify knowledge and data gaps (see Sect I below). The meeting then focused on identifying research and monitoring needed to make most appropriate management decisions based on knowledge/data gaps identified by the technical working group and the public (Sect II). The group then prioritized the data and knowledge as well as research and monitoring needed based on appropriate management needs and feasibility. Highlighted in yellow are areas of focus. The meeting ended with identification of potential partnerships and funding sources (Sect. III).

I 12:45 – 1:45 Identify Knowledge/Data gaps
  • Create maps of the system trying to protect/study. Both habitat maps and bottom contour/substrate maps. Helps to define resource and thus your strategy for that resource.
  • Identification of essential fish habitat, especially juvenile groundfish. Juveniles are most poorly known and monitored resource.
  • Is ODFW going to list habitats of concern in the Nearshore Strategy? Yes, ODFW is identifying key nearshore habitats. All will be given equal concern.
  • Ecosystem Description:
    • Baseline info - take what we have now; status where we are now and where we want to be in the future. Whatever we can do to describe the system.
      ✓ Need to have maps of habitat to compliment list of species and describe the system.
      ✓ Baseline geographic features, species richness, reef specific stock structure (for reef fish such as rockfish, also perch), life history information, and genetics.
      ✓ More info/data on both harvested and non-harvested species. We need to know more than just numbers of fish; reef specific information, age structure, and genetic stock structure. Don’t know much about health of populations being harvested. Very little info about system changes, plus new fisheries pop up all the time.
      ✓ Effective population size (number of breeders in a population, could be quite different than the total number in the population) and corresponding age structure; Include non-fish species
    • Spatial distribution of anthropogenic use (lay that map on top of habitat/species map). Early scale versus what you may be able to have 10-20 years from now (resolution). Quantifying habitat types.
• Physical oceanographic elements: currents, wave action impact on habitat, temperature, depth. Compile year-round information; have seasonal information.
• Can help define smaller ecoregions within the larger California current system?
• Important to include non-fish species (algae, inverts)
• No comprehensive food habit studies; who–eats-who, top predators in the system (birds and mammals).
• Nearshore species and habitat associations: understanding how fish utilize and depend on their habitats. Higher level knowledge of habitat function, how do we define habitat quality? How fish are associated with different types of structures. Quantifying habitat. Use habitat info to infer species that may be found in that area. “Seascape” ecology (habitat scales). Developing habitat models. Sensitivity and endurance of habitats to anthropogenic and environmental impacts.
• Collecting data on invasive species; Need to figure out what is native first.
• Relationship between variance and ocean productivity and its effects on fish distribution and recruitment. Perhaps not limited to Oregon.
• Dispersal mechanisms for larvae for fish and invertebrate organisms (biological and physical). Also juvenile dispersal over time.
• Marine Mammal/fisheries interactions studies; is the ecosystem out of balance? Or is this the effect of human actions?
• The Nearshore Strategy’s Strategy Species List has identified knowledge gaps regarding life history traits and habitat associations. Work to fill in gaps.

Habitat Mapping/surveying
• Does ODFW have GIS capability or people to work with GIS? ROV research currently, however funding is difficult. ROV is not the only tool used to construct maps of the reefs. Multibeam and sidescan surveys as well. ROV surveys are only done on rocky reef, site-specific locations. What would it take financially to do a coast wide habitat survey with ROV/multibeam/sidescan? Approximately $1 million. If the funding were there it wouldn’t take very long to get the habitat maps.
• Issue might be data management rather than data workup. Need more than one person available to work on the data. How to share data.
• Big effort on data management and sharing: GEOS (global), IOOS (U.S.), NANOOS (regional) - make use of Data Management Advisory Committee.
• Survey techniques ➔ dive surveys can be just as expensive and cumbersome as an ROV, plus the ROV can go deeper. Perhaps include additional survey techniques. Big knowledge gap of what is in the shallow nearshore (0 - 10 meters).
• Aerial LIDAR surveys (USGS). Coastline/shallow subtidal.

• Other Data/knowledge gaps
How much do we know about recreational activity? Not much beyond physical measurements and counts. Do boat counts and creel surveys. Lots of data gathered (back into early nineties), just needs to be processed. Financial restriction.

Recreational use of the rocky shores (algae collection, shellfish harvest)
Other habitats that are used by nearshore species at various life stages (estuarine, pelagic). Use and interactions. Also land-ocean connection to consider. Many impacts on the nearshore are coming from land uses.

Patterns vs. processes.

II 2:00 – 3:00 Research and Monitoring
Nearshore Harvested Species
- Collect maturity data, genetic data, on specific reefs rather than cumulative.
- Educate an angling club to volunteer for data collection. Example: Port Orford Ocean Resources Team, charter groups that have a vested interest and are not living in the valley.
  - Port liaison project to fund
  - Collecting size, sex, and maturity information
- Sit down with charter boat companies and see how you could use boats/operators/deck hands to work on projects.
- Need someone available to analyze data coming in (age readers, spatial). Also need someone dedicated (hired) to deal with this data and maybe volunteers to help this person.
- Pay part of the crewman’s wages to collect the data while they are out fishing. This brings up issues of getting people trained, and also quality control issues with the data.
- Need one person (from each port?) to be in charge of quality control (example: the research projects conducted by the Port Orford Ocean Research Team have a point person, Leesa Cobb, dedicated to quality control of collected data).
- Fine scale stock structure: not going to be gained from charter groups. Need grants to do more fundamental research.
- Provide incentives for fishermen (charters and commercial) to share their knowledge with researchers. These fishermen are doing sampling that NMFS trawl surveys don’t do.
- Encourage fishermen to contribute information/ideas and provide them with an end product. Allow them share in the responsibility of managing this resource.

Habitat Mapping
- LIDAR surveys → how deep does it penetrate in Oregon waters? Feasible for kelp or substrate surveys?
- Nearshore logbook info – refine scale and add info
- Add nearshore observers to near shore boats (validate catch/discard, gather bio data, fishing coordinates)
- Multibeam survey (coastal) combine with LIDAR (convince USGS to do multibeam surveys in Oregon)
- Start using GIS data entered in Recreational Fishing Information Network (RECFIN) and start turning out maps.

**Habitat Association**
- Getting NOAA to test (and pay for) their habitat classification system. What species are associated with these types of habitats? Ground truth NOAA habitat classifications.
- Move to more digital data for ease of analysis (digital logbooks/necessary devices).
  - How do you begin to transition from paper and pen to digital? Pilot project?
  - Incentive: fishermen can access their data, any analyses, and aggregated data. Make data protected; they can see their data as well as the aggregate data. Big issue is social contract.

**Baseline Info**
- Research species diversity, richness, and look for indicator species.
- Add nearshore observers to near shore boats (validate catch/discard, gather bio data, fishing coordinates)
- Set up control areas- inventory and monitor (maybe set up land based researchers to constantly monitor areas)
- Nearshore health assessment—need a way to decide if an area is healthy and/or the direction of resources (example: stock size increasing or decreasing).
  - EPA uses a multi-tiered assessment - can mix and match to tailor to limited $ resources.
  - Use EPA assessment of benthic community composition as a model for the nearshore (was exclusively soft bottom substrate)
- PISCO surveys; subtidal transects
- Good information and knowledge of habitats to better design assessments.

**Oceanographic types of data**
- Use charter boats/crab boats to carry flow-through sensors to collect physical data, or put on crab pots. Collect salinity, temperature, etc. COAS is currently starting to do with NOAA ships. This information can be used to understand oceanographic changes and distribution patterns.
  - Incentives/feedback - allow charter boat to be able to download and see data. Provide financial assistance for this equipment to be installed.
- Anything that can help us make decisions closer to real time is better.
- Have there been indicator systems put together to monitor fish health? Juvenile recruitment indices, economic indicators have been put together (25 of them) but are we looking to see if these are correlated to one another? How to do this cost effectively.
- Line up ocean conditions and patterns with ecosystem health (reproduction, recruitment, etc)
Resolution
- Habitat project to assess appropriate scales for research and monitoring - collect data and perform analysis at fine scale, then correlate between different sizes to see if/where you can collect majority of data at larger scale and subsample at finer scales.
- Define scale at which information is collected (habitat example - cobble and large boulders vs. all rocky reef)

Economic Profiles
- Need to think of people in terms of a predator. Try to understand the economics affecting their behavior (moral values, incentives)
- Human community/structure. Help draw sensible boundaries.
- Study trend in consumptive vs. non-consumptive uses.
- Examine state park records of use.
- Impacts on localized scale. Impacts of management decisions on port communities → port scale better than county scale, since they are the ones directly affected

III 3:00 - 4:00 Potential Partnerships/funding
- USGS survey → pressure to get USGS to do coast wide multi-beam survey. Needs to come from bottom-up to get done, need coastal community support.
- IOOS, PACOOS, NANOOS → opportunity for funding and centralized data management/data sharing.
- Regional ocean governance, recommended by National Ocean Commission. More local info needed in order to be able to implement regional ocean governance.
- Ocean Action Task Force → newly formed group that has emerged from the Ocean and Pew Commissions.
- Charter boat partners – funding through NOAA-NW Fisheries Science Center for cooperative fisheries research.
- Cooperative NOAA funded restoration projects – might be able to fund monitoring projects.
- Look at license fee system for research and monitoring money, look at distribution of money between user groups.
- Development projects will usually bring in money for research pertaining to the impacts of these activities (i.e., offshore oil and gas development, wave energy, etc.)
- Tribes → have federal funds and are interested in some research programs
- Hire a grant headhunter.

Comments and Questions:
- Have we defined what a “healthy nearshore ecosystem” looks like?
- Need to take into account behavior of users of these resources.
o What does economic analysis of the coast mean? Economic contributions of recreational/sport and commercial nearshore fisheries. Also, coastal demographics and economic contributions of marine and non-marine resource based industries as well as tourism.

o Obstacle of funding; is there any funding available, will there be anything available? This process will try to identify where to locate funding.

o How will this all feed back into Congress? A report will be given to US Fish and Wildlife Service measuring the success of conservation actions and review of the strategy.

o Is there a baseline that we can start from (what do we know already)? That will depend on the type of project or question for research and monitoring.

o Please distribute the draft for review by technical working group.