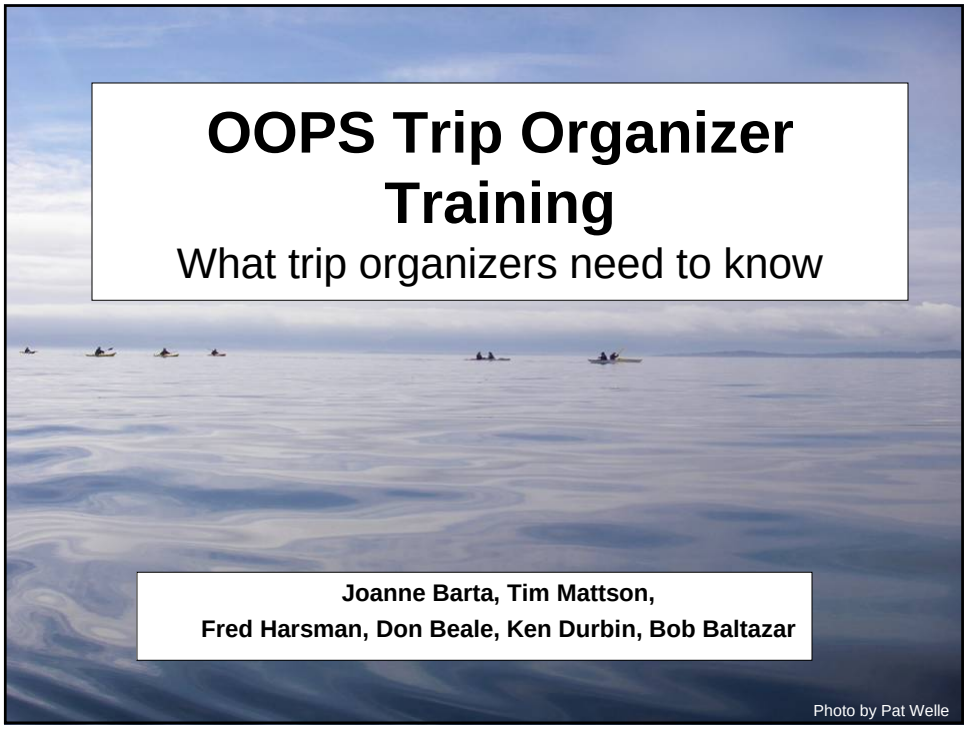


Agenda

- Introductions and Goals:
  - What makes a good leader?
- OOPS Logistics
  - Insurance and Paperwork
- Group Management
  - Groups and group formation
  - Responsibilities: trip organizers and participants
  - Group Management underway
- Safety
  - Risk Assessment
  - Medical Emergencies
  - Rescues
- Trip Planning
  - Match the skills, hazards and endurance of your group members
  - The Rating System
  - Tides, Currents, Weather
- Individual/Small-group Project
  - Plan a trip you want to run this year
- What makes a good Leader – Recap
- Reference and Backup Materials

Joanne

Goals of OOPS Trip Organizer Training

- To increase the number of OOPS trip organizers.
- To increase the number of OOPS trips.
- To help us all improve our leadership skills:
  - Practical experience to increase our confidence as leaders.
  - Increased awareness of our responsibilities.
  - Better understanding of the challenges we may encounter on the water … and how to respond to them.

It's **COOL** to organize trips for OOPS

Agenda

- Introductions and Goals:
  - What makes a good leader?
- OOPS Logistics
  - Insurance and Paperwork
- Group Management
  - Groups and group formation
  - Responsibilities: trip organizers and participants
  - Group Management underway
- Safety
  - Risk Assessment
  - Medical Emergencies
  - Rescues
- Trip Planning
  - Match the skills, hazards and endurance of your group members
  - The Rating System
  - Tides, Currents, Weather
- Individual/Small-group Project
  - Plan a trip you want to run this year
- What makes a good Leader – Recap
- Reference and Backup Materials

Life in the Land of Liability

- Insurance:
  - OOPS has liability insurance:
    - Protects the club, it's leaders and volunteers if we are sued
    - Protection only holds if we act according to standard practice established by "experts" in the sport.
- How to keep our insurance
  - Understand and follow the rules
  - Document EVERY trip: conditions, people, events…

Without the Insurance, trip-organizers and instructors couldn't afford to risk involvement with OOPS.

No insurance … no OOPS.

The Rules

- Source of rules
  - Insurance requirements …. Common sense… professional standards
- Key rules (full list in the OOPS activity policy document)
  - Equipment appropriate to the trip:
    - PFDs, sprayskirts, bilge pump, whistle, first aid kit, food/water, etc.
  - Dress for immersion risk.
    - No cotton.
  - Keep the group together!
  - Waivers and pre-trip talks are required
  - Every trip has a CPR certified first aid person.
  - Fill out ALL required paperwork (there isn't much of it)
- Lead trips a full level below your own ability.
  - E.g. If you can only safely paddle up to level 3, you should only lead up to level 2 trips.

Rules set minimum standards … anticipate, adapt, and stay safe.

Paperwork

1. Before the trip is advertised:
   - Trip organizer resume:
     - Fill out and submit to OOPS trips coordinator for OOPS' files. You only need to do this once.
   - Trip Planning worksheet:
     - Submit to trips coordinator AND get approval BEFORE advertising a trip.
2. At the Put-in BEFORE getting on the water:
   - Release forms:
     - One for each participant … including trip leaders
3. After the trip
   - Trip follow-up report and roster:
     - Send to trip coordinator right after the trip.
   - Trip incident report:
     - Fill out if there are incidents … even if a small one. You never know when something trivial may grow into something serious.

documents and trip leader packets available at:
www.oopskayak.org

Demonstration: Sample Paperwork

- We'll show examples of:
  - Resume,
  - Planning worksheet,
  - Trip report,
  - Incident report,

Note: these don't take long to fill out.
It's all about time on the water, not time at a desk filling out paperwork.

Agenda

- Introductions and Goals:
  - What makes a good leader?
- OOPS Logistics
  - Insurance and Paperwork
- Group Management
  - Groups and group formation
  - Responsibilities: trip organizers and participants
  - Group Management underway
- Safety
  - Risk Assessment
  - Medical Emergencies
  - Rescues
- Trip Planning
  - Match the skills, hazards and endurance of your group members
  - The Rating System
  - Tides, Currents, Weather
- Individual/Small-group Project
  - Plan a trip you want to run this year
- What makes a good Leader – Recap
- Reference and Backup Materials

Groups that work

- A group of people working together with a common goal.
  - Our target: A group that is greater than the sum of its parts
  - A common result … cat herding
- The four stages of Group formation
  - Form: the people come together
  - Storm: the initial chaos … individuals working in proximity
  - Norm: Individuals pulling together with a common goal
    - The collection of people become a pod.
  - Perform: The pod is greater than the sum of its parts
- A good leader deliberately drives a group through these stages … quickly:
  - Clear communication
  - Consider games to "form the group" and get them to the Norm stage ASAP

Everyone is Responsible to the group

- A trip organizer is responsible for:
  - Rating the trip for expected and actual conditions
  - Interviewing/screening the participations
  - Making sure the appropriate equipment is on hand (first aid kit, tow belt, etc) .. Both for the organizers and participants.
  - Proper immersion wear.
  - Check Weather forecasts and evaluate at the put in.

- A trip Participant is responsible for:
  - Having appropriate equipment.
  - Proper immersion wear.
  - STAYING WITH the GROUP.
  - Following the leaders instruction.
  - Reading the trip plan, understanding the agenda, and asking questions.
  - Communicate concerns early and often.
  - Know weather forecasts.
  - Be reasonably self sufficient.

Everyone is an active member of the pod

OOPS does not run a guide service

Managing the group underway

- Everyone is responsible for group management
  - Good groups need good leaders and good followers.
  - Communicate problems, concerns, plans.
  - Nobody leaves the group without permission (not even the leader)
- Keep the group together
  - Point, sweep and wings for beginners and hazardous situations.
    - Point looks behind him/her-self … sets pace so slowest paddler can keep up.
  - Relaxed pod for less stressful situations
  - Count-off so you can easily check that everyone is present … especially important for large groups.
- Have fun … don't be a control freak.
  - Conditions dictate how tightly you manage the group.
  - Be assertive and take charge.
- Split groups if necessary … but only into proper groups (with Leader, gear, paddle plan, etc.).

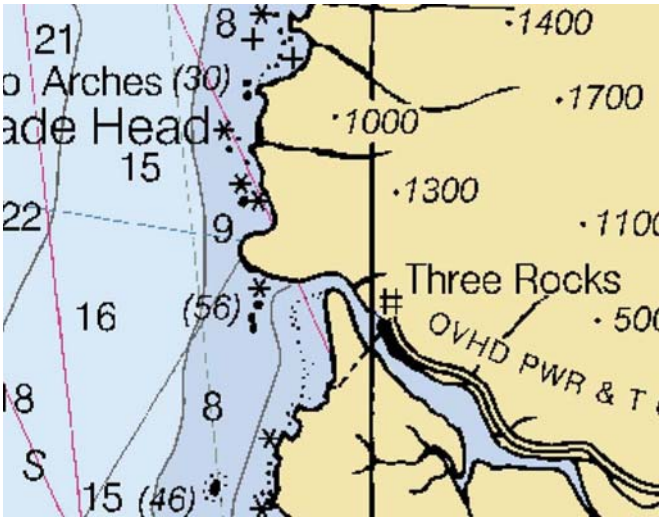
CLAP

- Key aspects of a well managed group: CLAP
  - Communication: agree on communication plan up front.
  - Line of sight: Keep the group members in line of sight.
  - Avoidance: Its easier to avoid trouble than deal with it.
  - Position the leader for maximum effectiveness

Scenario 1

- You are leading a trip to the Salmon river and around Cascade head.
- Conditions:
  - Mid morning in October
  - NW Wind 10 kt. AM growing to 20 kt. in the afternoon
  - W swell 3 ft, 8 sec period
  - Morning fog burning off in the afternoon.
  - Low tide late in the day

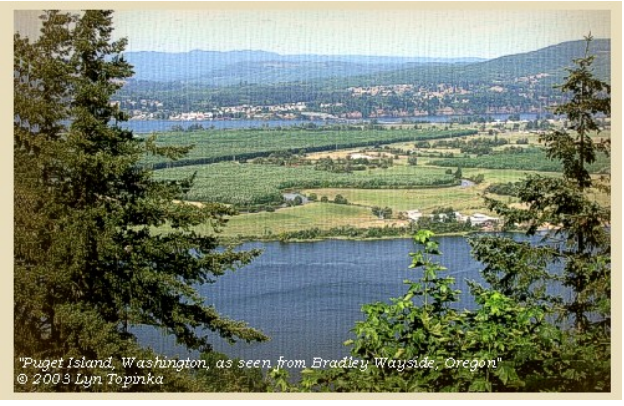
Cascade head



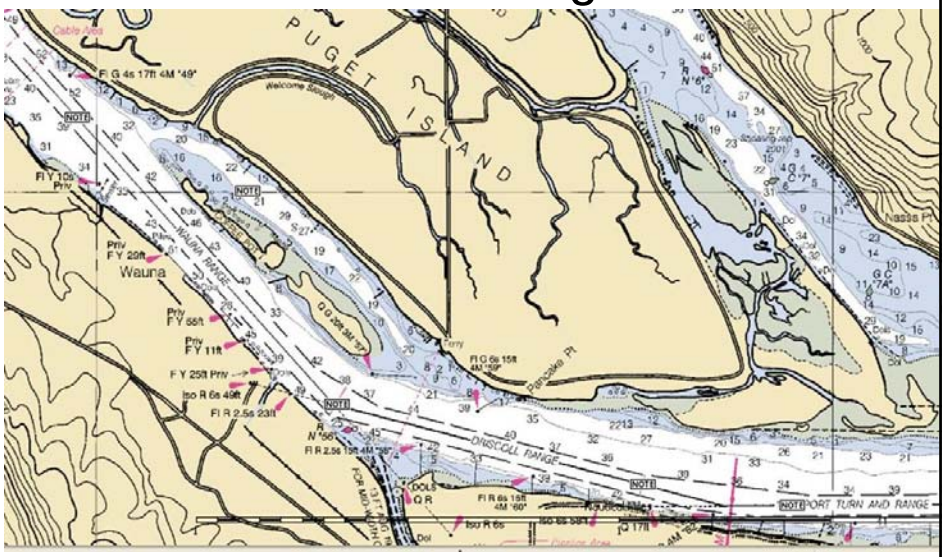
What are the hazards? Where would you position yourself as you take a group around the head?

Scenario 2

- You are leading a trip along the southwest shore side of Puget Island (on the Columbia River).
  - Late morning in mid-April
  - Sunny and clear
  - W wind, 15 kt.
  - Low tide late in the afternoon

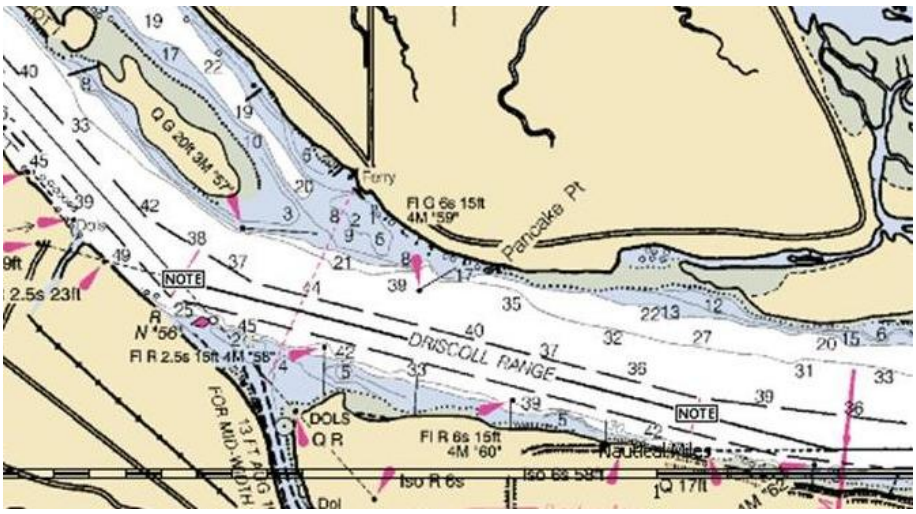


Columbia River/Puget Island



What are the hazards? Where would you position yourself as you take a group along the island?

Columbia River/Puget Island
See all the wing dams!



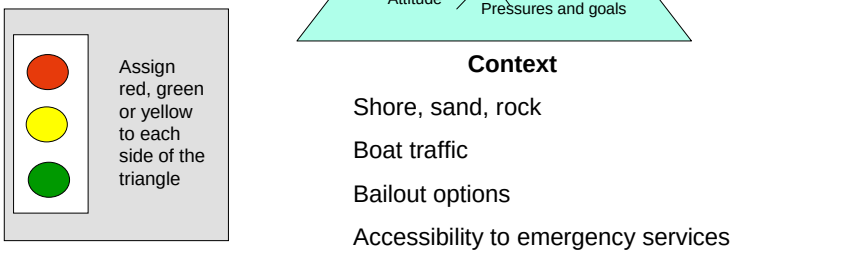
Agenda

- Introductions and Goals:
  - What makes a good leader?
- OOPS Logistics
  - Insurance and Paperwork
- Group Management
  - Groups and group formation
  - Responsibilities: trip organizers and participants
  - Group Management underway
- Safety
  - Risk Assessment
  - Medical Emergencies
  - Rescues
- Trip Planning
  - Match the skills, hazards and endurance of your group members
  - The Rating System
  - Tides, Currents, Weather
- Individual/Small-group Project
  - Plan a trip you want to run this year
- What makes a good Leader – Recap
- Reference and Backup Materials

Safety: general principles

- Everybody is responsible for safety: but the trip organizer has special responsibilities.
- Three key principles
  - Hazards: Anticipate and avoid them, but don't assume you can always avoid hazards … be prepared to deal with them.
  - Risk Assessment … have a system to quickly assess risks and keep updating your assessment as the trip unfolds.
  - Medical emergencies … Understand the most common medical emergencies OOPS members are likely to face and be ready.

Risk Management Triangle



Shore, sand, rock

Boat traffic

Bailout options

Accessibility to emergency services

Source: NOLS, www.nols.edu

Risk Assessment: Keep it simple

- There are many systems out there:
  - NOLS
  - Body boat blade
  - PEG: People, Environment, Gear
  - BBC: Bodies, Boats (and equipment), Conditions
  - The Mother Principle (worst case scenario analysis)

The key is to have a system that helps you remember ALL they key issues you need to consider.

Find one that works for you … and use it

- Before the trip
- At the put-in
- Throughout the day

Medical Emergencies

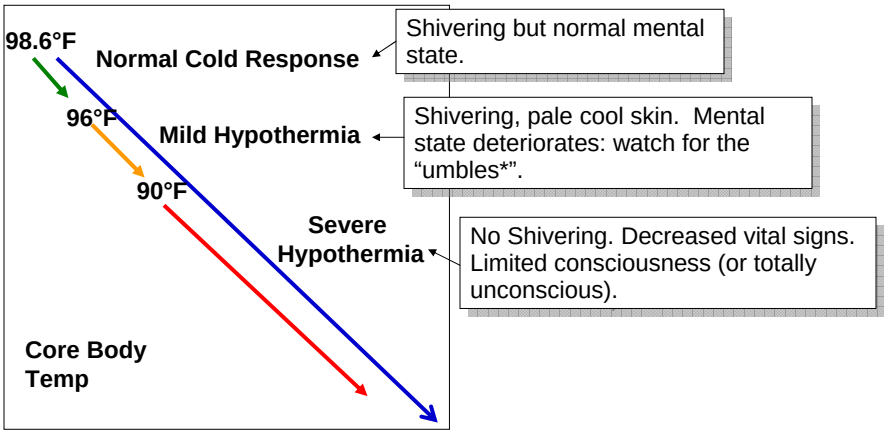
- Red Cross training is for an Urban environment:
  - professional medical care is minutes away.
  - Medical emergencies: Wash your hands, dial 911, know CPR.
- Kayaking is more exposed:
  - Professional medical care is hours to days away.
  - Medical emergencies: deal with it … you are on your own!
- Be prepared for what you might encounter on an OOPS trip:
  - Cold water plus wet and stormy weather
  - The demographics of our paddlers
    - Most OOPS members are middle aged or beyond
    - Most of us are “desk bound” and not in the shape as we’d like

Cold water emergencies: hypothermia

- Hypothermia: reduced body core temperature.
  - If not addressed, it will eventually lead to death.
- The sources of Hypothermia:
  - Lack of heat retention – cold environment without proper compensation (lack of adequate protective clothing).
  - Lack of heat production – Low fuel (sugars, carbohydrates), lack of heat-producing activity (exercise)

In the Pacific Northwest, hypothermia is the most common medical emergency faced by kayakers.

3 levels of Hypothermia



Treat hypothermia aggressively … It does not "fix itself".

*umbles: grumbles, mumbles, stumbles

Hypothermia - Treatment

- Normal Cold Response: Easy to "nip in the bud"
  - Remove the cold challenge. Dry off, fuel up, exercise.
  - Put on additional protective clothing..
- Mild Hypothermia: Immediate action is needed, but you can still fix this in the field.
  - Remove the cold challenge. Get them dry, insulated, fueled and active. Warm drinks, chemical heat packs (on the chest, armpits and groin), water bottles full of warm drinks and body-to-body contact are all helpful.
- Severe Hypothermia: Death is imminent, rapid evacuation is essential
  - Severe hypothermia is a very fragile medical state. Rewarming is dangerous and requires specialized equipment. The heart is particularly fragile.
  - Stop further cooling and gently transport the victim to medical care. The victim should be transported flat, as this causes the least strain on the heart.

Hypothermia: things can go wrong FAST in Water

Hypothermia is possible in any water below 96°f. The only question is how long it will take before the effects are felt.

Water Temp	Useful Work	Unconscious
32.5°f	< 5 min.	< 15 min.
40°f	7.5 min.	30 min.
50°f	15 min.	60 min.
60°f	30 min.	2 hrs.
70°f	45 min.	3 hrs.

Surviving Cold Water

- Hypothermia takes time … but you also have to worry about the body's initial response to immersion in cold water… cold shock:
  - Rapid, uncontrollable breathing (Hyperventilation, Gasping Reflex)
  - Constriction of the capillaries under the skin causing an immediate increase in blood pressure and heart rate
- When you fall into cold water … remember the 1-10-1 rule:
  - 1 minute to control breathing
  - 10 minutes to get out of the water
  - 1 hour to die.

Photo credit http://www.enter.net/~skimmer/coldwater.html

Medical Emergencies:

- Migraine headaches:
  - Severe headaches that start with visual disturbances (aura or flashing lights), vertigo, tingling … lasting hours to days.
  - Not life threatening, but victim probably will not be able to paddle.
- Shoulder dislocations
  - Patient will hold arm in a position to minimize pain.
  - Stabilize the joint in that position and evacuate.
- Wounds:
  - Clean them thoroughly and cover with sterile dressing.
- Bee Stings … life threatening allergic reactions
  - Anaphylactic shock. Ask before the trip if this is an issue … if it is, make sure the person in question tells you where their epi-pen is.
- Asthma
  - Most people will self-treat with their inhaler. Patient may be greatly distressed … may need to coaching to relax and breath deeply.
- Serious medical issues common to OOPS demographic group
  - Cardiovascular events … emergency evacuation
  - Diabetes … people should tell you about it at the put-in. Carry tube of frosting in your first aid kit … if a diabetic has problems, treat for hypoglcemia by administering the frosting.

Agenda

- Introductions and Goals:
  - What makes a good leader?
- OOPS Logistics
  - Insurance and Paperwork
- Group Management
  - Groups and group formation
  - Responsibilities: trip organizers and participants
  - Group Management underway
- Safety
  - Risk Assessment
  - Medical Emergencies
  - Rescues
- Trip Planning
  - Match the skills, hazards and endurance of your group members
  - The Rating System
  - Tides, Currents, Weather
- Individual/Small-group Project
  - Plan a trip you want to run this year
- What makes a good Leader – Recap
- Reference and Backup Materials

The pre-trip interview

- Make sure people are right for the trip … If you don't know them, talk to them (phone or email):
- Ask them about:
  - Do they have the experience they need? Watch out for know-nothing experts and over confident "pros".
  - What do they do when they capsize?
  - Do they have the right equipment and clothing?
  - Are they in shape for the planned trip?

When in doubt, gently guide them to a more appropriate trip.

Demonstration: the pre-trip interview

- Two of us will demonstrate a pre-trip interview.
- Key points to note:
  - Be encouraging.
  - Be realistic … remember if you give-in and let an unprepared person join the group, everyone suffers.
  - Steer the person to a more appropriate OOPS trip if that makes sense.

OOPS Trip levels

Condition	Level 1	Level 2	Level 3	Level 4	Level 5
Wind	Under 7 knots.	Up to 12 knots	Up to 16 knots	Up to 21 knots	Exceed any two level 4 conditions Three or more level 4 conditions present
Sea State	Small wavelets, no whitecaps	Large wavelets, scattered whitecaps	Numerous whitecaps, growing waves	Many whitecaps, some spray	
Waves, surf	waves < 1' no surf	Waves to 2', no surf	Waves to 3', 2' surf	Waves to 6', 4' surf	
Landing Type	Gently sloping, sand, gravel or grass	Docks, moderate sloping banks, brush or overhanging trees	Bad footing, surf up to 1.5'	Steep rocky shores sheltered from the waves or surf up to 4'	
Open Crossings	No open crossings	Under 1 mile	1 to 2 miles	2 to 4 miles	
Total Distance	Up to 6 miles	6 to 11 miles	11 to 15 miles	15 to 22 miles	
Current	Under 1 knot	Up to 2 knots	Up to 4 knots	Up to 6 knots	

Any two conditions exceeding a level's listing bumps the rating up to the next level.
Night or limited visibility (fog) bumps the rating up one level.

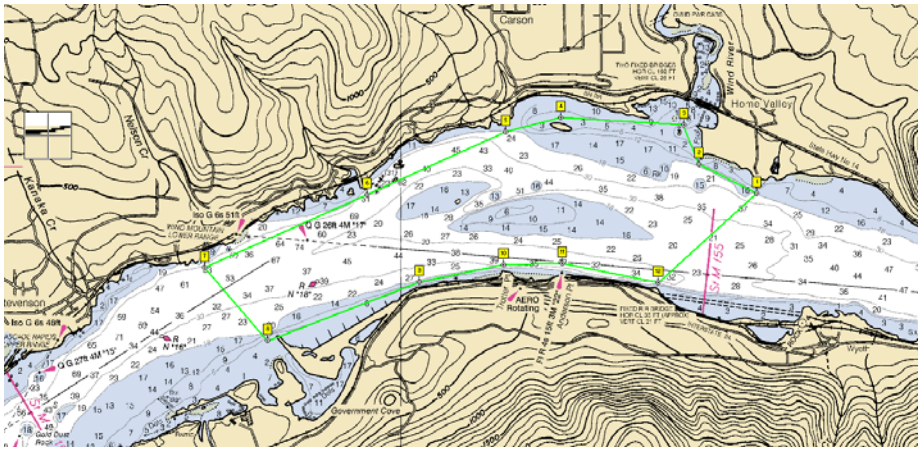
Recommended Skills per level

	Level 1	Level 2	Level 3	Level 4	Level 5
Paddling	Forward, reverse, sweep turns, stern rudder	High and low bracing. Comfort with some edging. Efficient forward stroke.	Eddy line crossings. Confident edge control and bracing.	Confident boat control in wind and moving water. Reliable roll.	Reliable rough water roll.
Rescue	Wet exit ability	Confident wet exits and assisted rescues (as swimmer and rescuer). Paddle float or other self-rescue.	Confident assisted and self rescues.	Recently rehearsed assisted rescues in Level 3 or Level 4 conditions.	Confident rough water assisted rescue ability.
Group Dynamics	Group positioning awareness	Group positioning and dynamics awareness.	Group management ability.	Confident group management experience.	Confident group management experience
Navigation			Basic navigation skills.	Accurate course plotting and chart positioning skills.	Night and limited visibility navigation

Trip rating System: Definitions

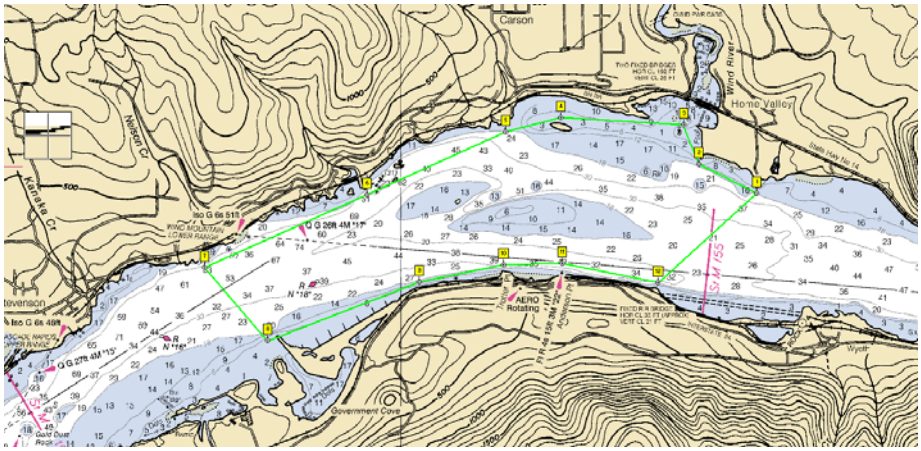
- **Ability versus Confidence:**
  - Ability, having done the skill. Confidence, having rehearsed the skill until it is automatic. For example, rescues: Ability is having done one or two. Confidence is assurance that the rescue will be done in under a minute in the present conditions, in whatever configuration presents itself as convenient.
- **Basic navigation skills:**
  - Awareness of one's location on a chart. Ability to steer by compass.
- **Confident wet exits:**
  - Can retain boat and paddle in the wind during a wet exit and rescue; have rehearsed wet exits in conditions similar to the intended trip.
- **Group positioning, group dynamic awareness, and group management experience:**
  - Group positioning is the distance between the furthest two paddlers in the group. Group dynamic awareness is an awareness of the movement of the group and action to keep the group together. By level three, the conditions are actively separating the group and group management should be an integral function of the group, not something driven from the leaders down. By level four, this is critical. Group management experience helps give a paddler an understanding of the issues involved. The intent is to begin this awareness at level one, develop it at level two, refine it at level three, and count on it at level four.
- **Long Wave Form:**
  - Waves are organized in rows.
- **Moving water:**
  - Eddies, boils, currents or waves that are actively changing the boats course.
- **Open Crossing:**
  - Over two miles of potential fetch (regardless of the forecast wind direction) and no reliable bail.
- **Recently rehearsed:**
  - Within the past year.
- **Reliable roll:**
  - Ability to miss a roll or two and then hit the next one.
- **Reliable rough-water roll:**
  - Ability to stay underwater for several seconds in various positions with currents or waves moving the boat around, and then set up and roll on either side.

Rate this trip: Wind river



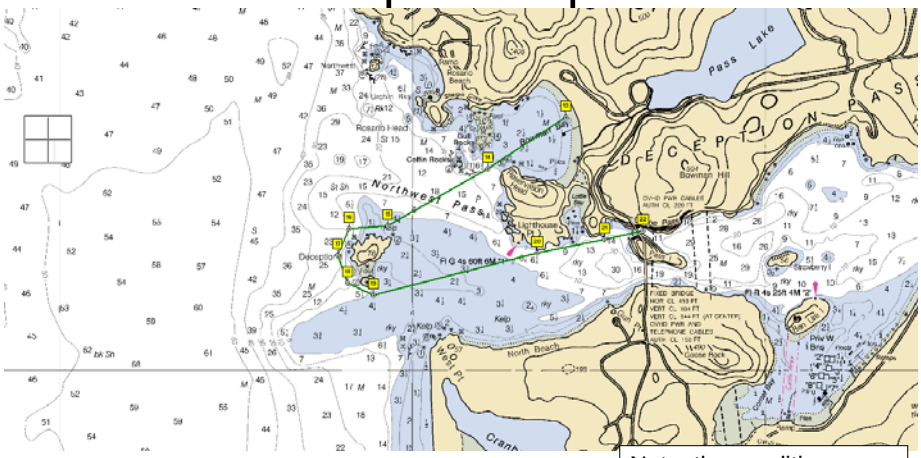
- Expected Wind is from the NW at 10 knots.
- Currents are 2 knots
- Crossing distance is 1mile.

Rate this trip: Wind river



- We arrive and the actual conditions are:
  - Wind is west at 20 knot.
  - Current at 2 knots, crossing is 1 mile
- Re-rate this trip for the actual conditions.

Rate the trip: Deception Pass



- Crossing distance is ¾ mile.
- Wind is calm.
- Current is ebbing at 6.5 knots in Canoe Pass.

Note: the conditions are solid level 4, but the consequences of a capsize are low since you'll just flush into relatively calm water.

Check tides, current and weather

- Check weather on line in the days leading up to the trip.
- Check for future conditions … storms can move in early.
- Bring a VHF radio to check weather at the put-in and along the way.

weather and swell	http://www.wrh.noaa.gov/
tide height	http://tidesandcurrents.noaa.gov/tides09/
current information	http://tidesandcurrents.noaa.gov/currents09/

Remember: most paddlers can only hold a 3 knot pace over long distances so any current approaching 3 knots or more can get you into deep trouble!

Demonstration

- Consider a trip in the Ilwaco area:
  - Check Tide
  - Check current
  - Check weather
- If Internet access look up the data … otherwise use screen dumps (in the backup slides).

Agenda

- Introductions and Goals:
  - What makes a good leader?
- OOPS Logistics
  - Insurance and Paperwork
- Group Management
  - Groups and group formation
  - Responsibilities: trip organizers and participants
  - Group Management underway
- Safety
  - Risk Assessment
  - Medical Emergencies
  - Rescues
- Trip Planning
  - Match the skills, hazards and endurance of your group members
  - The Rating System
  - Tides, Currents, Weather
- Individual/Small-group Project
  - Plan a trip you want to run this year
- What makes a good Leader – Recap
- Reference and Backup Materials

Individual/small-group project

- Split up into groups
  - Fill out paddler/trip-leader resume
  - Plan an actual trip
    - Select the trip
    - Fill out the trip planning worksheet
    - Check weather, tides and currents as if you were doing the trip tomorrow.

Agenda

- Introductions and Goals:
  - What makes a good leader?
- OOPS Logistics
  - Insurance and Paperwork
- Group Management
  - Groups and group formation
  - Responsibilities: trip organizers and participants
  - Group Management underway
- Safety
  - Risk Assessment
  - Medical Emergencies
  - Rescues
- Trip Planning
  - Match the skills, hazards and endurance of your group members
  - The Rating System
  - Tides, Currents, Weather
- Individual/Small-group Project
  - Plan a trip you want to run this year
- What makes a good Leader – Recap
- Reference and Backup Materials

What makes a good trip organizer

- Let's review our list from the beginning.
- What would you change now that we've gone over these materials.

What makes a good leader? The Trip Organizer Rubric: part 1

- Group Management:
  - Identifies weakest spot in group and positions self for assistance.
  - Knows where each person in the group is at all times.
  - Identifies behavioral changes in individual group members
  - Acts upon new information to preserve the integrity and safety of the group
- Towing:
  - Know when to tow and when not to tow.
  - Demonstrate hooking into one or more boats.
  - Set up an inline tow.
  - Use a quick release.
- Rescuer:
  - Take charge; give the swimmer calm, clear and concise instructions.
  - Maintain control of boats, paddles, and swimmer
  - Have the swimmer back in their boat within one minute in conditions one level above the trip rating.
  - Able to rescue a paddler who cannot help themselves (scoop rescue).

What makes a good leader? The Trip Organizer Rubric: part 2

- Use of Planning Recourses:
  - Charts - show fetch, depth contours, possible landing spots, chart symbols
  - Weather - show at least three different resources for forecast information
  - Tides - Show more than one resource for tide height data
  - Currents - use NOAA website to pull information on currents, where applicable.
- Communication:
  - Be polite but firm.
  - Be friendly, positive, encouraging, patient, realistic, energetic, and tactful.
  - Good trip leaders remember that the reason people have signed up for our trip is to paddle and have fun. It is our job to see that they are successful.
  - Observe each member and be sensitive to individual situations.

What makes a good trip Organizer?

- Good trip organizers remember that the reason people have signed up for our trip is to paddle and have fun. It is our job to see that they are successful.
- Good trip organizers strive to continuously improve … Pursue continuing education:
  - Paddling skills (strokes, etc.)
  - Seamanship, navigation, etc.

Agenda

- Introductions and Goals:
  - What makes a good leader?
- OOPS Logistics
  - Insurance and Paperwork
- Group Management
  - Groups and group formation
  - Responsibilities: trip organizers and participants
  - Group Management underway
- Safety
  - Risk Assessment
  - Medical Emergencies
  - Rescues
- Trip Planning
  - Match the skills, hazards and endurance of your group members
  - The Rating System
  - Tides, Currents, Weather
- Individual/Small-group Project
  - Plan a trip you want to run this year
- What makes a good Leader – Recap
- Reference and Backup Materials

Reference and Backup materials

- Paddling in Current … the 50/90 rule
- Estimating tides: the rule of twelfths
- Some medical emergency notes
- Additional risk Assessment slides
- Supporting materials for the Ilwaco trip planning exercise

Current Definitions

- Set of the current – the direction towards which the current is flowing.
  - E.g. A current flowing from the north to the south is called a southerly current. Notice that this is opposite to the convention with wind for which direction indicates where it is blowing from.
- Drift of the current – its speed in knots.
- Flood – the current that occurs when the water flows from the sea towards shore and increases the level of the tide.
- Ebb – a current that occurs when water flows from shore towards sea and the level of the tide decreases.
- Slack – the state of relative calm in the current when it changes from an Ebb to a Flood or visa versa.
  - Notice: the more precise term now used on current forecasts is “minimum before flood” or “minimum before ebb” since in many cases the current never truly stops … i.e. the water never stops moving (i.e. goes slack).

Rule of thirds AKA the 50/90 rule

- The NOAA tables tell you when to find slack and peak currents.
- Use the rule of thirds to estimate current at other times:
  - Divide the time between slack and peak into thirds (approximately, three one hour segments)
  - After the first hour, the current will be at 50 percent of peak.
  - After the second hour, the current will be 90 percent of peak
  - After the third hour, the current will be a peak.
- The inverse applies going from peak to slack.

Crossings in current

- When crossing a channel in current, the current will flush you along the channel as you cross.
- Consider the 1.5 nm crossing from Clatsop spit to sand island when the current running at a 2 knot ebb:
  - Estimate your paddling speed (3 knots for most paddlers).
  - Measure distance and compute travel time (e.g. cross form Clatsop spit to sand island, or 1.5 nm or ½ hour).
  - Estimate or look up current moving through the channel (For this example, assume its running at 2 knots).
  - The current will then flush you ½ hr * 2 nm/hr = 1 nm.
- So to cross, you could hug the shore (where the current is weak) and head upstream 1 nm and then cross … i.e. let the current flush you to your desired destination.

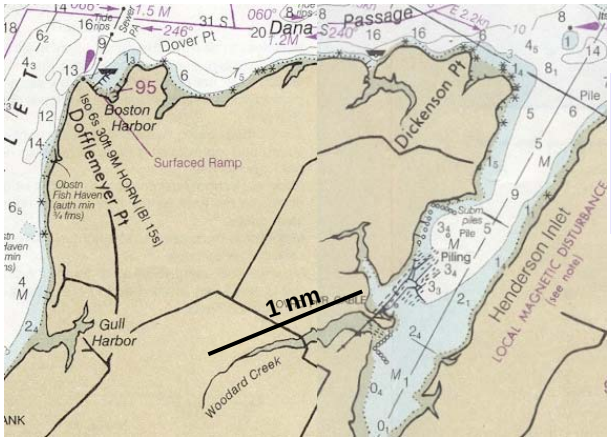
Get high and stay high!

Reference and Backup materials

- Paddling in Current … the 50/90 rule
- Estimating tides: the rule of twelfths
- Some medical emergency notes
- Additional risk Assessment slides
- Supporting materials for the Ilwaco trip planning exercise

Estimating tides:

- Your are leading a group of paddlers to explore the Woodard Creek estuary. You know that:
  - From past experience, its all mud at a 1 ft tide.
  - Tide data: high 9' at noon, low 0' at 6 PM.

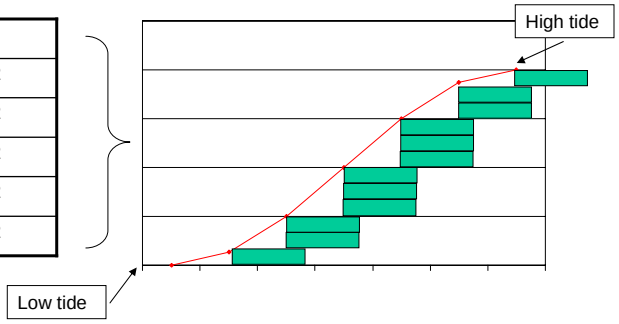


- What time must you turn the group around to avoid the mud?

Estimating Tides: The rule of 12ths

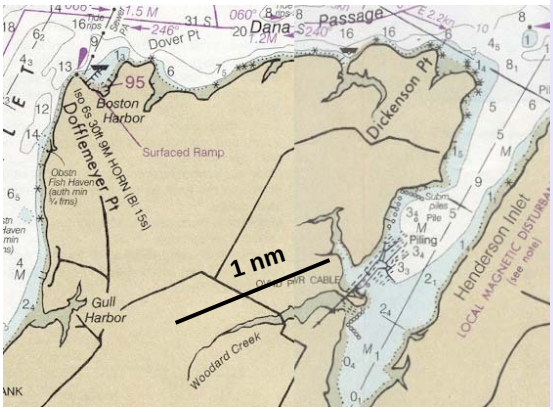
- Tide varies from low to high (and back again) according to a smooth curve called a sine wave.
- The rule of 12th's approximates a quarter sine wave
  - Divide time from low to high tide into six segments (~ on hour segments).
  - The change after each segment (hour) expressed as a fraction of 12:

First hour	1/12
Second hour	+2/12
Third hour	+3/12
Fourth hour	+3/12
Fifth hour	+2/12
Sixth hour	+1/12



Using the rule of 12ths to estimate "turn-around" time

- Assume:
  - Tide data: high 9' at noon, 0' at 6 PM.
  - its all mud at a 1 ft tide.
  - You want 2' min depth to avoid bottom drag
  - Group paddles at three knots



- Divide tide range by 12
  9'/12 = ¾ '
- Desired min depth is 3' (2' + mud depth of 1')
- Convert min tide into "12ths"
  3' / (¾)' = 4
- By the rule of 12ths, you get to 4 segments in 2 1/3 hr or the group must be out 2 1/3 hr before 6PM or 3:40 PM.
- Group paddles at 3 knots, so 20 mins to go 1 nm and get out.
- Turn around no later than 3:20 PM

Reference and Backup materials

- Paddling in Current … the 50/90 rule
- Estimating tides: the rule of twelfths
- Some medical emergency notes
- Additional risk Assessment slides
- Supporting materials for the Ilwaco trip planning exercise

Medical Emergencies: Cardiovascular distress

- Heart Attack, interruption in blood flow leading to death of heart tissue.
- Symptoms include any (or none) of the following:
  - Chest pain/pressure
  - Rapid, shallow breathing
  - Shortness of breath
  - Nausea, sweating

These symptoms match many problems.

If patients are at high risk of heart disease (i.e. they are a typical OOPS member) and if it comes on suddenly with exercise, assume it's the heart

- Treatment: Rapid evacuation is essential. Keep patient calm and exertion low and get help FAST.

Detect and intervene early … before CPR is needed.

Diabetes

- Reduced ability to regulate blood sugar: Two types:
  - Type 1: usually diagnosed in childhood.
    - The body makes little or no insulin; regular injections of insulin are essential.
    - people with type 1 know they have it and should tell you in advance.
  - Type 2: usually develops later in life.
    - Body is insensitive to insulin. Most common form of Diabetes.
    - Many people with type 2 diabetes do not know they have it.

Around 17 million people in the U.S. have Diabetes … and the numbers are growing rapidly as the population ages and gets heavier.

Diabetes: hypoglycemia

- Hypoglycemia: low blood sugar … caused by (1) too much insulin, (2) unusually hard or long exercise, or (3) insufficient food.
- Symptoms can develop slowly or very quickly

Weakness	shaking	sweating
headache	nervousness	hunger

- Treatment:
  - sugar: fruit juice, several teaspoons of sugar, or regular soda. Wait 15 minutes, if the symptoms don't subside, more sugar should be eaten. Test blood sugar … repeat food till normal (but be careful … don't overshoot to hyperglycemia).
  - AFTER the symptoms subside, more substantial food can be eaten. Eat simple sugar FIRST to get the situation under control.
- If caught early and treated successfully, the victim can continue the trip

This is by far, the most common Diabetic Emergency you'll face. And if you recognize it early, it's the easiest one to deal with.

Diabetes: less common emergencies

- Diabetic ketoacidosis
  - Low insulin, high glucose … body can't use what's there so it breaks down fat to make more … leading to more glucose it can't use and ketones (fat metabolism by-products) building up in blood
  - Symptoms: Fruity smelling breath, Nausea, vomiting, fatigue muscle aches, rapid and labored breathing. Confused mental state progressing to coma (and death).
  - Treatment: force fluids, bring blood sugars back to normal. Experienced diabetics can catch it early and self treat. If progresses to vomiting and confused mental state, evacuate to definitive medical care.
- Nonketonic hyperglycemic hyperosmolar coma (NKHHC):
  - Extremely high blood sugar and sodium without ketones. Sugar and sodium draw water (osmosis) into bloodstream leading to a downward spiral into coma and death. Fatality rate as high as 40%.
  - Symptoms: Dehydration, excessive urination as kidneys struggle to piss off excess glucose, "umbles" leading to decreased consciousness and extremely high blood sugar.
  - Seen in people with type-2 diabetes … including those previously undiagnosed with diabetes.
  - Cause: Dehydration, infection, medications that lower glucose tolerance or increase fluid loss. Kidneys normally remove excess glucose, but with NKHHC, they can't do this due to dehydration.
  - Treatment: manage dehydration and evacuate.

Reference and Backup materials

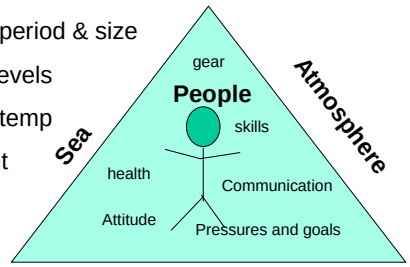
- Paddling in Current … the 50/90 rule
- Estimating tides: the rule of twelfths
- Some medical emergency notes
- Additional risk Assessment slides
- Supporting materials for the Ilwaco trip planning exercise

Risk Management Triangle

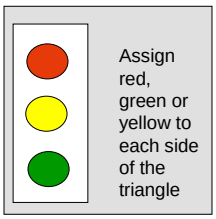
Assign stop-lights to each side of the triangle based on risk relative to the conditions inside the triangle.

All **green** is “good to go”. **Red** is “no-go”. **Yellow** is “proceed with caution”

Swell, period & size
River levels
Water temp
Current
Tide



Wind
Temperature
Precipitation
Temperature



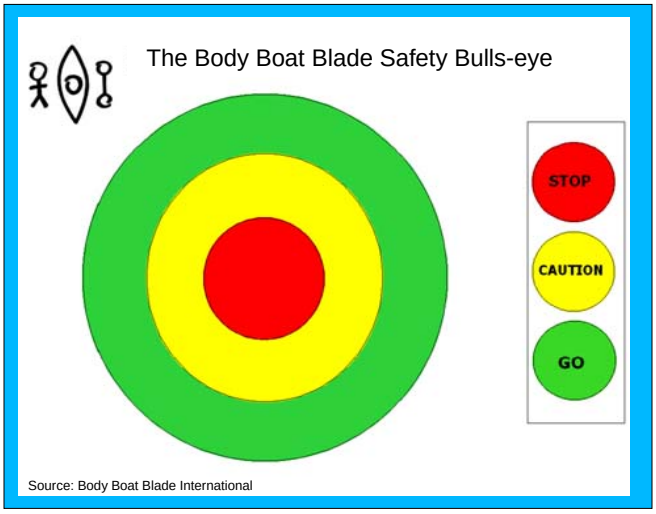
Assign red, green or yellow to each side of the triangle

Context

Shore, sand, rock
Boat traffic
Bailout options
Accessibility to emergency services

Source: NOLS, www.nols.edu

Risk Assessment: The BBB Bulls-eye



- Create a check list of risk factors (see next slide).
- Evaluate group relative to each category
- Place a mark for each category
  - Green: go
  - Yellow: caution
  - Red: no-go
- A bulls-eye with a bunch of red marks would be an obvious no go situation.
- One with lots of green and a couple of yellows might be a go.

Risk Analysis: The BBB Check list

- **Weather**
  - Big picture
    - improving, same, degrading
  - Wind
    - Speed … now and later
    - Direction … now and later
    - Off-shore or on-shore
    - Relation to currents
  - Rain/Sun
    - Temperature
    - Psychology
  - Visibility
    - Fog
    - Night/Dusk
- **Land**
  - Outs
    - Terrain
    - Remoteness
    - Roads
    - Help
  - Landings
    - Swell
    - Beach type
    - Tide
  - Other hazards
- Water
  - Swell
    - Size
    - Period
    - direction
  - Tides
    - High, low, range
    - Relation to off shore boomers
    - Relation to on-shore break
  - Currents
    - Speed and direction
    - Relation to wind, swell
    - Tide races and overfalls
  - Boat traffic and shipping
  - Other hazards
- Groups
  - Leader/s
    - Walk in park?
    - Can you pick of the pieces and/or pull the group out?
  - Behavior of individuals in forecast conditions
  - Strength
    - Physical
    - Mental
    - skills
  - Personal equipment of group
    - Body
    - Boat
    - Safety
  - Health concerns
- **Other Factors**
  - Time of day
  - Sunset/sunrise times

5 Categories: Weather, Land, Water, Group, Other Factors.

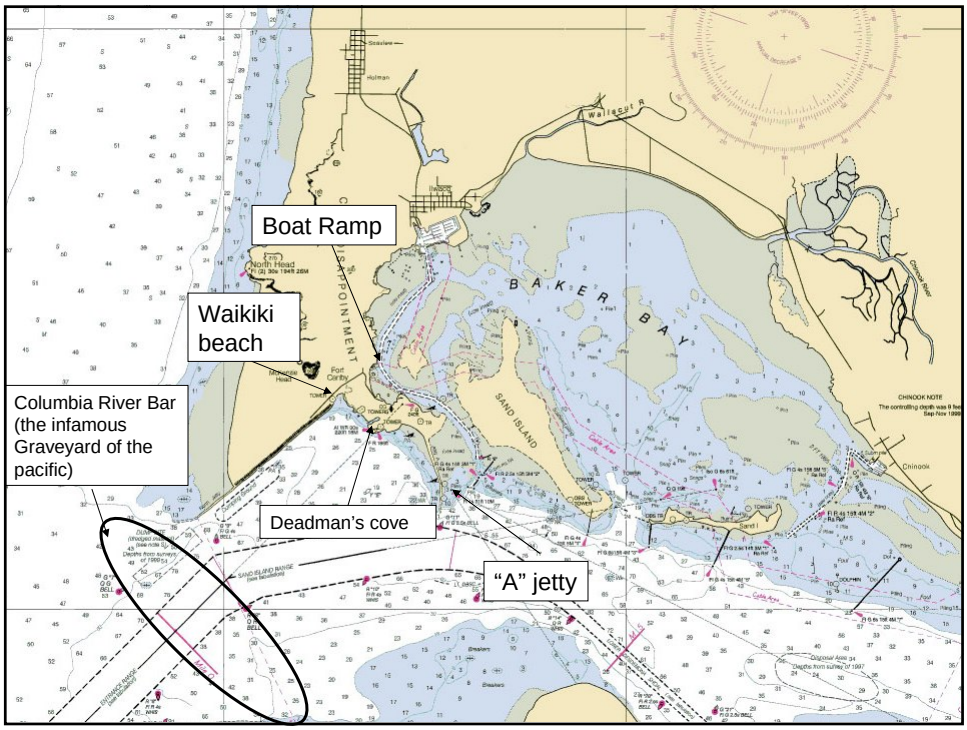
Evaluate each and record results (go, no-go, caution) on the bulls-eye

Reference and Backup materials

- Paddling in Current … the 50/90 rule
- Estimating tides: the rule of twelfths
- Some medical emergency notes
- Additional risk Assessment slides
- Supporting materials for the Ilwaco trip planning exercise

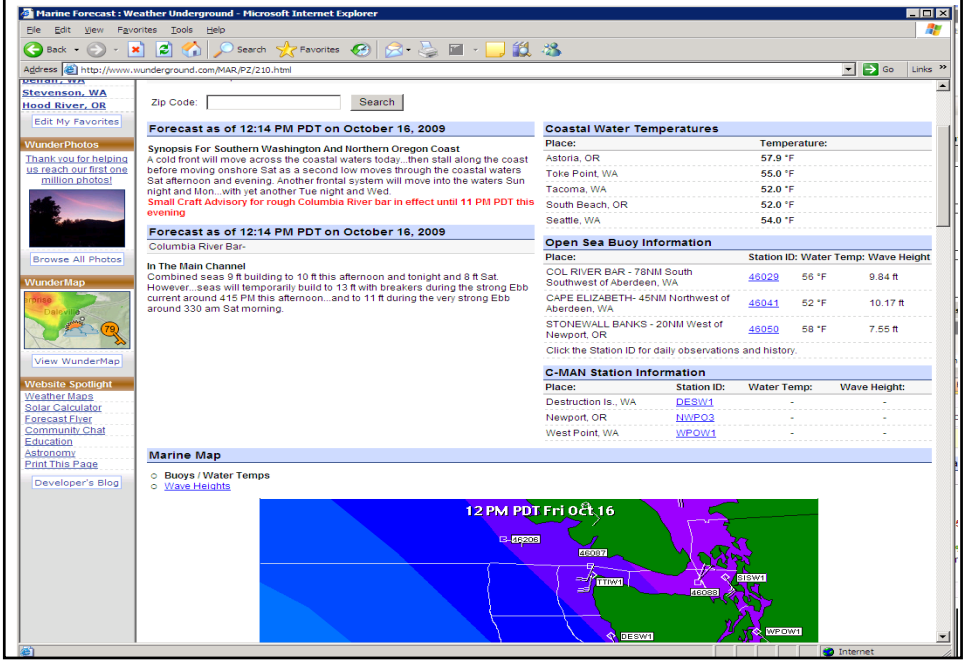
Supporting data for trip planning exercise Ilwaco, WA

- Charts
- Marine Forecast
- Tide data
- Current data

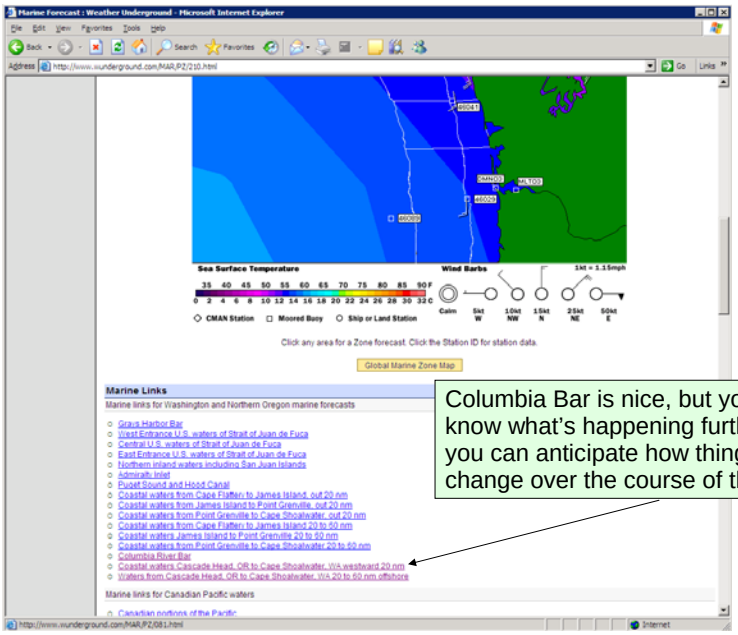


Weather underground .. Ilwaco WA Oct 16, 2009

Marine Forecast, Ilwaco WA Oct 16, 2009

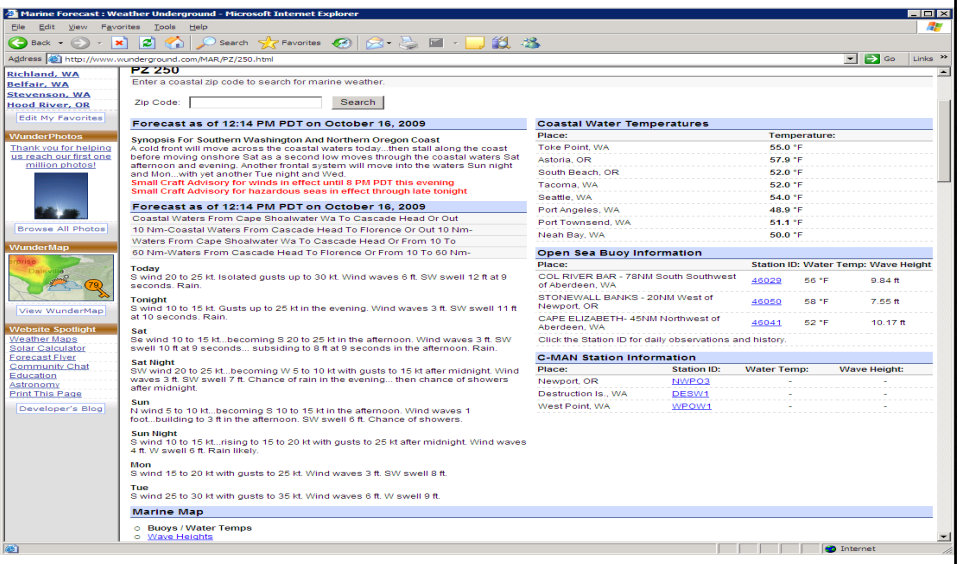


Marine forecast options OR/WA coasts

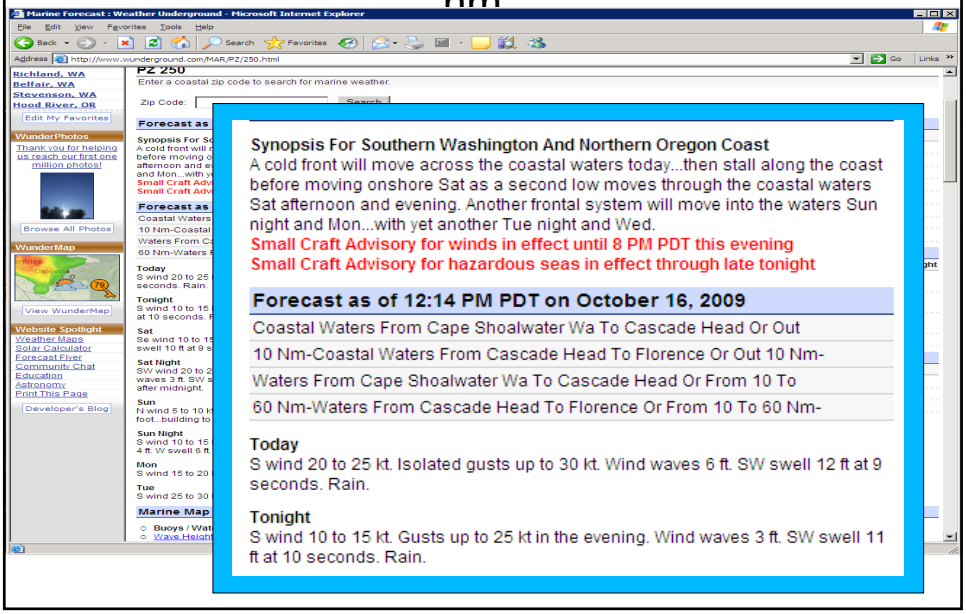


Columbia Bar is nice, but you need to know what's happening further out so you can anticipate how things will change over the course of the day.

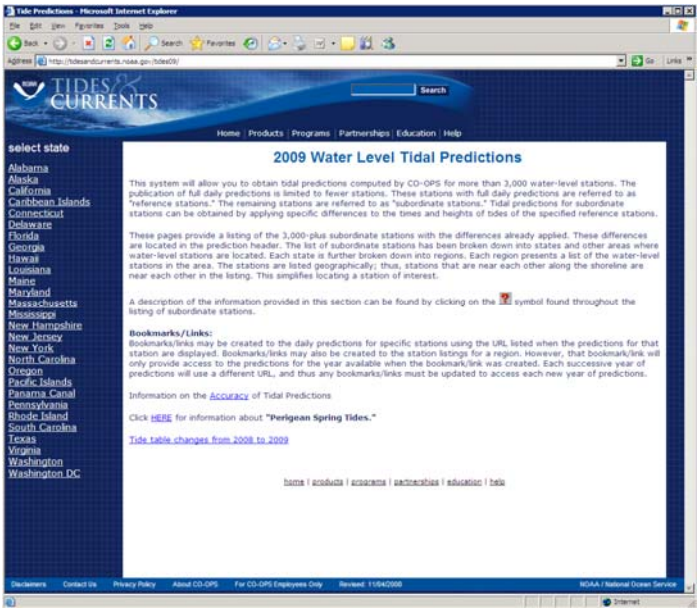
Marine forecast Oct. 16, 2009 cascade head to cape Shoalwater westward 20 nm



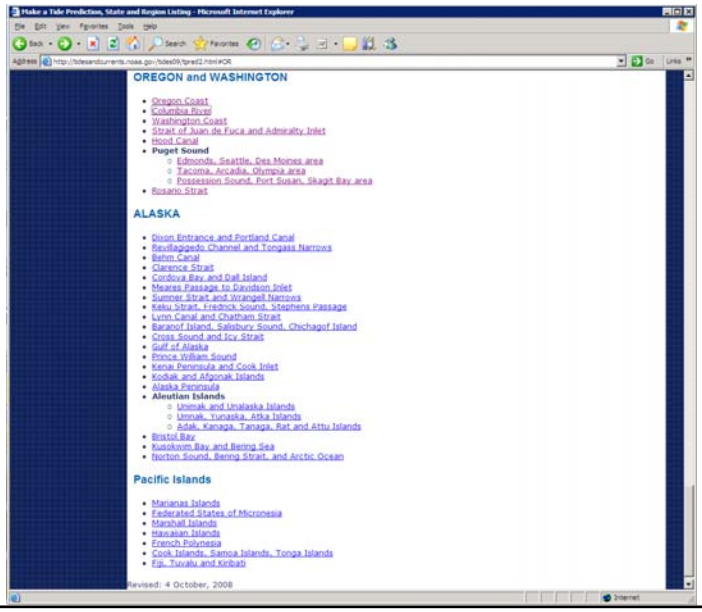
Marine forecast Oct. 16, 2009 cascade head to cape Shoalwater westward 20 nm



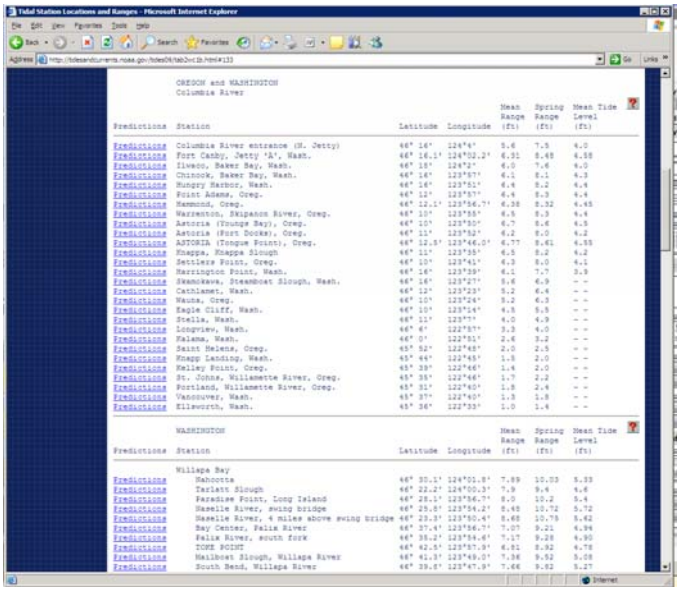
NOAA tide web page



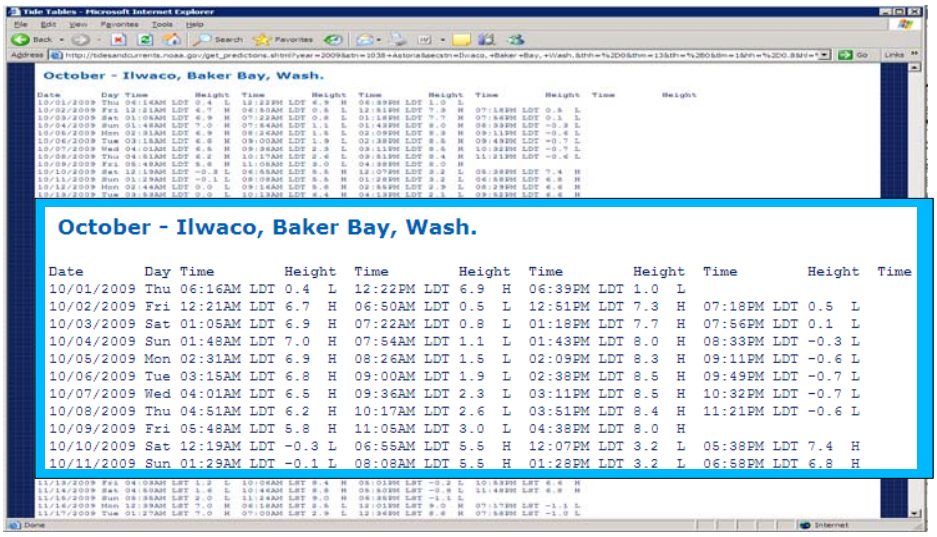
Washington/Oregon tide stations



Tide Stations along Columbia river



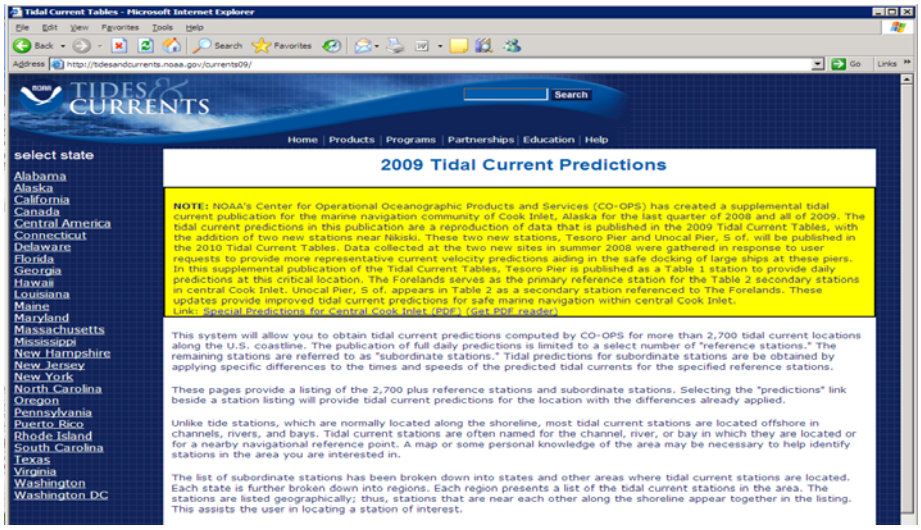
Baker Bay (a-jetty) tides



October - Ilwaco, Baker Bay, Wash.

Date	Day	Time	Height		Time	Height		Time	Height		Time	Height		Time
10/01/2009	Thu	06:16AM LDT	0.4	L	12:22PM LDT	6.9	H	06:39PM LDT	1.0	L				
10/02/2009	Fri	12:21AM LDT	6.7	H	06:50AM LDT	0.5	L	12:51PM LDT	7.3	H	07:18PM LDT	0.5	L	
10/03/2009	Sat	01:05AM LDT	6.9	H	07:22AM LDT	0.8	L	01:18PM LDT	7.7	H	07:56PM LDT	0.1	L	
10/04/2009	Sun	01:48AM LDT	7.0	H	07:54AM LDT	1.1	L	01:43PM LDT	8.0	H	08:33PM LDT	-0.3	L	
10/05/2009	Mon	02:31AM LDT	6.9	H	08:26AM LDT	1.5	L	02:09PM LDT	8.3	H	09:11PM LDT	-0.6	L	
10/06/2009	Tue	03:15AM LDT	6.8	H	09:00AM LDT	1.9	L	02:38PM LDT	8.5	H	09:49PM LDT	-0.7	L	
10/07/2009	Wed	04:01AM LDT	6.5	H	09:36AM LDT	2.3	L	03:11PM LDT	8.5	H	10:32PM LDT	-0.7	L	
10/08/2009	Thu	04:51AM LDT	6.2	H	10:17AM LDT	2.6	L	03:51PM LDT	8.4	H	11:21PM LDT	-0.6	L	
10/09/2009	Fri	05:48AM LDT	5.8	H	11:05AM LDT	3.0	L	04:38PM LDT	8.0	H				
10/10/2009	Sat	12:19AM LDT	-0.3	L	06:55AM LDT	5.5	H	12:07PM LDT	3.2	L	05:38PM LDT	7.4	H	
10/11/2009	Sun	01:29AM LDT	-0.1	L	08:08AM LDT	5.5	H	01:28PM LDT	3.2	L	06:58PM LDT	6.8	H	

NOAA current entry page



TIDES & CURRENTS

Search

Home | Products | Programs | Partnerships | Education | Help

select state

Alabama
Alaska
California
Canada
Central America
Connecticut
Delaware
Florida
Georgia
Hawaii
Louisiana
Maine
Maryland
Massachusetts
Mississippi
New Hampshire
New Jersey
New York
North Carolina
Oregon
Pennsylvania
Puerto Rico
Rhode Island
South Carolina
Texas
Virginia
Washington
Washington DC

2009 Tidal Current Predictions

NOTE: NOAA's Center for Operational Oceanographic Products and Services (CO-OPS) has created a supplemental tidal current publication for the marine navigation community of Cook Inlet, Alaska for the last quarter of 2008 and all of 2009. The tidal current predictions in this publication are a reproduction of data that is published in the 2009 Tidal Current Tables, with the addition of two new stations near Nikiski. These two new stations, Tesoro Pier and Unocal Pier, S of, will be published in the 2010 Tidal Current Tables. Data collected at the two new sites in summer 2008 were gathered in response to user requests to provide more representative current velocity predictions aiding in the safe docking of large ships at these piers. In this supplemental publication of the Tidal Current Tables, Tesoro Pier is published as a Table 1 station to provide daily predictions at this critical location. The Forelands serves as the primary reference station for the Table 2 secondary stations in central Cook Inlet. Unocal Pier, S of, appears in Table 2 as a secondary station referenced to The Forelands. These updates provide improved tidal current predictions for safe marine navigation within central Cook Inlet.
Link: Special Predictions for Central Cook Inlet (PDF) (Get PDF reader)

This system will allow you to obtain tidal current predictions computed by CO-OPS for more than 2,700 tidal current locations along the U.S. coastline. The publication of full daily predictions is limited to a select number of "reference stations." The remaining stations are referred to as "subordinate stations." Tidal predictions for subordinate stations are be obtained by applying specific differences to the times and speeds of the predicted tidal currents for the specified reference stations.

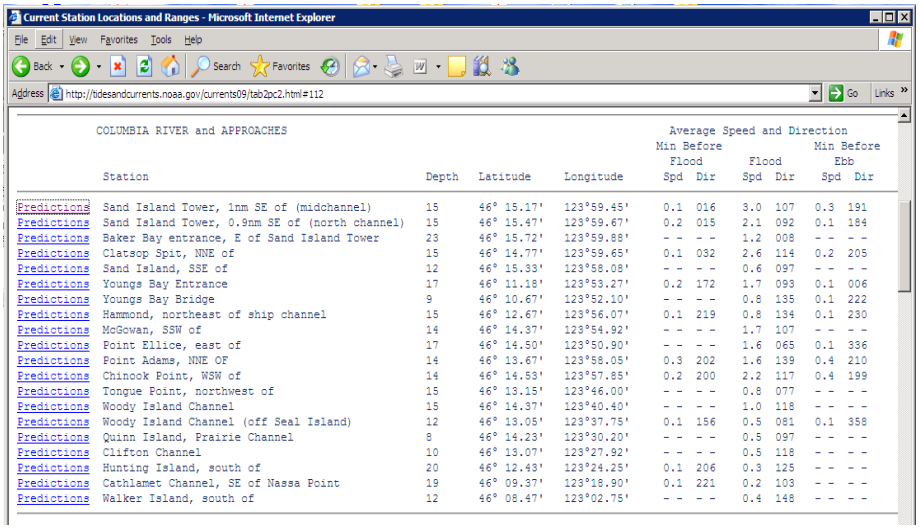
These pages provide a listing of the 2,700 plus reference stations and subordinate stations. Selecting the "predictions" link beside a station listing will provide tidal current predictions for the location with the differences already applied.

Unlike tide stations, which are normally located along the shoreline, most tidal current stations are located offshore in channels, rivers, and bays. Tidal current stations are often named for the channel, river, or bay in which they are located or for a nearby navigational reference point. A map or some personal knowledge of the area may be necessary to help identify stations in the area you are interested in.

The list of subordinate stations has been broken down into states and other areas where tidal current stations are located. Each state is further broken down into regions. Each region presents a list of the tidal current stations in the area. The stations are listed geographically; thus, stations that are near each other along the shoreline appear together in the listing. This assists the user in locating a station of interest.

Current Regions in Oregon and Washington

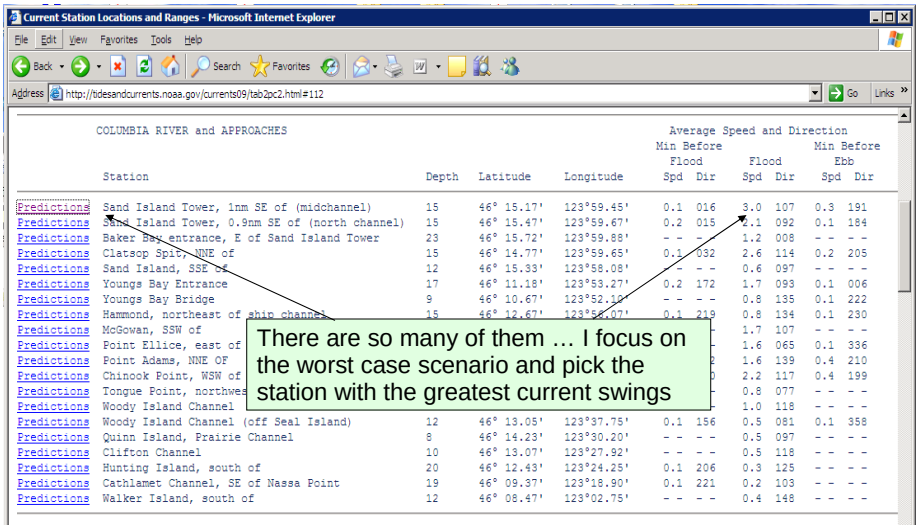
Columbia river current stations



COLUMBIA RIVER and APPROACHES

	Station	Depth	Latitude	Longitude	Average Speed and Direction: Min Before Flood Spd	Min Before Flood Dir	Flood Spd	Flood Dir	Min Before Ebb Spd	Min Before Ebb Dir
Predictions	Sand Island Tower, 1nm SE of (midchannel)	15	46° 15.17'	123°59.45'	0.1	016	3.0	107	0.3	191
Predictions	Sand Island Tower, 0.9nm SE of (north channel)	15	46° 15.47'	123°59.67'	0.2	015	2.1	092	0.1	184
Predictions	Baker Bay entrance, E of Sand Island Tower	23	46° 15.72'	123°59.88'	- -	- -	1.2	008	- -	- -
Predictions	Clatsop Spit, NNE of	15	46° 14.77'	123°59.65'	0.1	032	2.6	114	0.2	205
Predictions	Sand Island, SSE of	12	46° 15.33'	123°58.08'	- -	- -	0.6	097	- -	- -
Predictions	Youngs Bay Entrance	17	46° 11.18'	123°53.27'	0.2	172	1.7	093	0.1	006
Predictions	Youngs Bay Bridge	9	46° 10.67'	123°52.10'	- -	- -	0.8	135	0.1	222
Predictions	Hammond, northeast of ship channel	15	46° 12.67'	123°56.07'	0.1	219	0.8	134	0.1	230
Predictions	McGowan, SSW of	14	46° 14.37'	123°54.92'	- -	- -	1.7	107	- -	- -
Predictions	Point Ellice, east of	17	46° 14.50'	123°50.90'	- -	- -	1.6	065	0.1	336
Predictions	Point Adams, NNE OF	14	46° 13.67'	123°58.05'	0.3	202	1.6	139	0.4	210
Predictions	Chinook Point, WSW of	14	46° 14.53'	123°57.85'	0.2	200	2.2	117	0.4	199
Predictions	Tongue Point, northwest of	15	46° 13.15'	123°46.00'	- -	- -	0.8	077	- -	- -
Predictions	Woody Island Channel	15	46° 14.37'	123°40.40'	- -	- -	1.0	118	- -	- -
Predictions	Woody Island Channel (off Seal Island)	12	46° 13.05'	123°37.75'	0.1	156	0.5	081	0.1	358
Predictions	Quinn Island, Prairie Channel	8	46° 14.23'	123°30.20'	- -	- -	0.5	097	- -	- -
Predictions	Clifton Channel	10	46° 13.07'	123°27.92'	- -	- -	0.5	118	- -	- -
Predictions	Hunting Island, south of	20	46° 12.43'	123°24.25'	0.1	206	0.3	125	- -	- -
Predictions	Cathlamet Channel, SE of Nassa Point	19	46° 09.37'	123°18.90'	0.1	221	0.2	103	- -	- -
Predictions	Walker Island, south of	12	46° 08.47'	123°02.75'	- -	- -	0.4	148	- -	- -

Columbia river current stations



COLUMBIA RIVER and APPROACHES

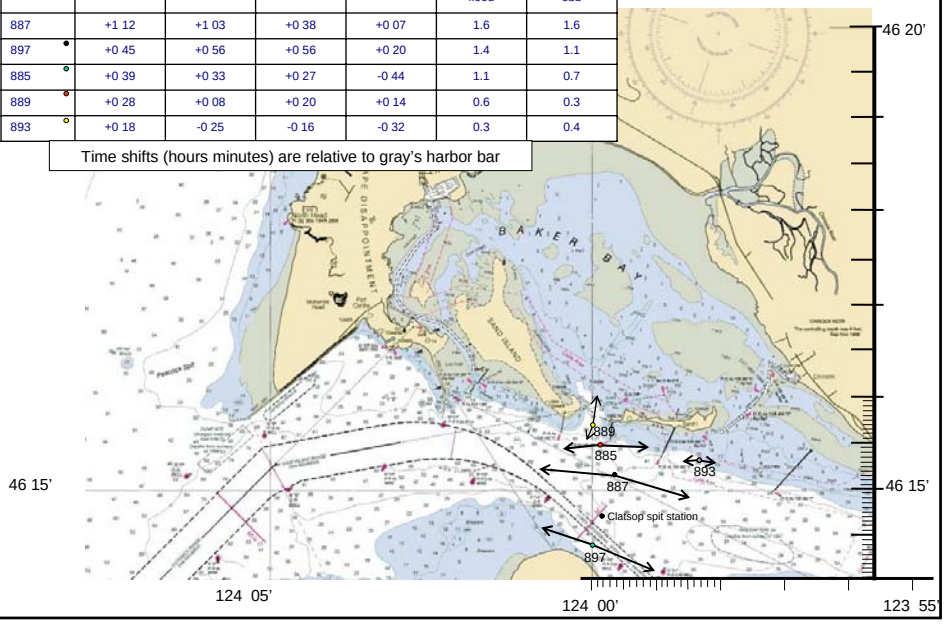
	Station	Depth	Latitude	Longitude	Average Speed and Direction: Min Before Flood Spd	Min Before Flood Dir	Flood Spd	Flood Dir	Min Before Ebb Spd	Min Before Ebb Dir
Predictions	Sand Island Tower, 1nm SE of (midchannel)	15	46° 15.17'	123°59.45'	0.1	016	3.0	107	0.3	191
Predictions	Sand Island Tower, 0.9nm SE of (north channel)	15	46° 15.47'	123°59.67'	0.2	015	2.1	092	0.1	184
Predictions	Baker Bay entrance, E of Sand Island Tower	23	46° 15.72'	123°59.88'	- -	- -	1.2	008	- -	- -
Predictions	Clatsop Spit, NNE of	15	46° 14.77'	123°59.65'	0.1	032	2.6	114	0.2	205
Predictions	Sand Island, SSE of	12	46° 15.33'	123°58.08'	- -	- -	0.6	097	- -	- -
Predictions	Youngs Bay Entrance	17	46° 11.18'	123°53.27'	0.2	172	1.7	093	0.1	006
Predictions	Youngs Bay Bridge	9	46° 10.67'	123°52.12'	- -	- -	0.8	135	0.1	222
Predictions	Hammond, northeast of ship channel	15	46° 12.67'	123°56.07'	0.1	219	0.8	134	0.1	230
Predictions	McGowan, SSW of						1.7	107	- -	- -
Predictions	Point Ellice, east of						1.6	065	0.1	336
Predictions	Point Adams, NNE OF						1.6	139	0.4	210
Predictions	Chinook Point, WSW of						2.2	117	0.4	199
Predictions	Tongue Point, northwes						0.8	077	- -	- -
Predictions	Woody Island Channel						1.0	118	- -	- -
Predictions	Woody Island Channel (off Seal Island)	12	46° 13.05'	123°37.75'	0.1	156	0.5	081	0.1	358
Predictions	Quinn Island, Prairie Channel	8	46° 14.23'	123°30.20'	- -	- -	0.5	097	- -	- -
Predictions	Clifton Channel	10	46° 13.07'	123°27.92'	- -	- -	0.5	118	- -	- -
Predictions	Hunting Island, south of	20	46° 12.43'	123°24.25'	0.1	206	0.3	125	- -	- -
Predictions	Cathlamet Channel, SE of Nassa Point	19	46° 09.37'	123°18.90'	0.1	221	0.2	103	- -	- -
Predictions	Walker Island, south of	12	46° 08.47'	123°02.75'	- -	- -	0.4	148	- -	- -

There are so many of them … I focus on the worst case scenario and pick the station with the greatest current swings

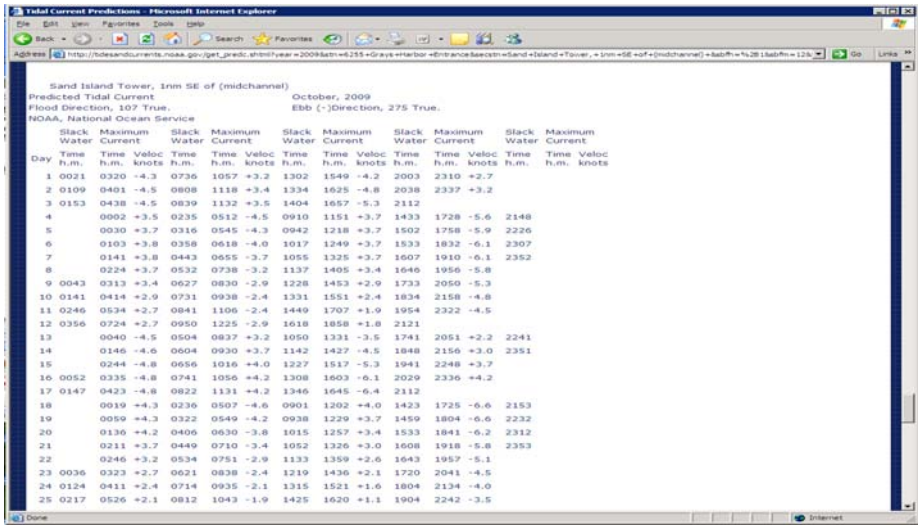
Current Stations near Ilwaco

Station #	Slack	flood	slack	ebb	Speed ratio flood	Speed ratio ebb
887	+1 12	+1 03	+0 38	+0 07	1.6	1.6
897	+0 45	+0 56	+0 56	+0 20	1.4	1.1
885	+0 39	+0 33	+0 27	-0 44	1.1	0.7
889	+0 28	+0 08	+0 20	+0 14	0.6	0.3
893	+0 18	-0 25	-0 16	-0 32	0.3	0.4

Time shifts (hours minutes) are relative to gray's harbor bar



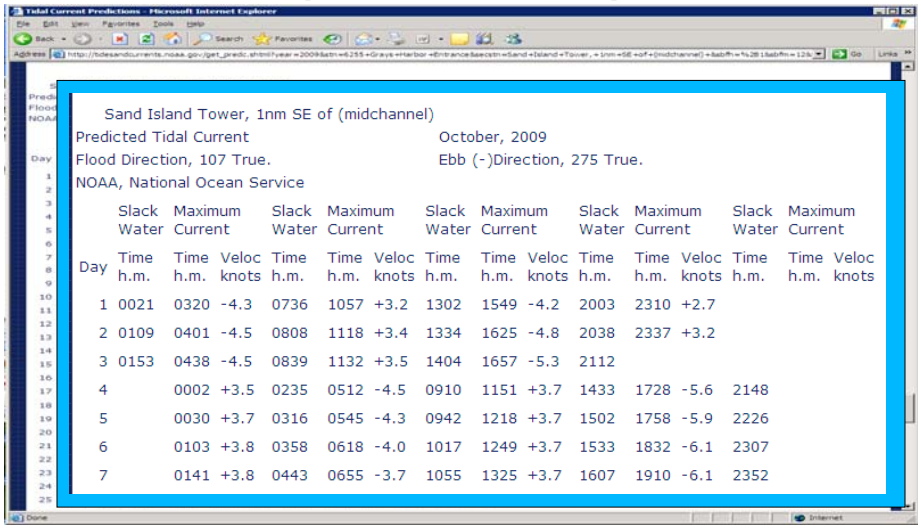
Sand Island, 1nm SE of (midchannel)



Sand Island Tower, 1nm SE of (midchannel)
Predicted Tidal Current — October, 2009
Flood Direction, 107 True. — Ebb (-)Direction, 275 True.
NOAA, National Ocean Service

Day	Slack Water Time h.m.	Maximum Current Time h.m.	Maximum Current Veloc knots	Slack Water Time h.m.	Maximum Current Time h.m.	Maximum Current Veloc knots	Slack Water Time h.m.	Maximum Current Time h.m.	Maximum Current Veloc knots	Slack Water Time h.m.	Maximum Current Time h.m.	Maximum Current Veloc knots	Slack Water Time h.m.	Maximum Current Time h.m.	Maximum Current Veloc knots
1	0021	0320	-4.3	0736	1057	+3.2	1302	1549	-4.2	2003	2310	+2.7			
2	0109	0401	-4.5	0808	1118	+3.4	1334	1625	-4.8	2038	2337	+3.2			
3	0153	0438	-4.5	0839	1132	+3.5	1404	1657	-5.3	2112					
4		0002	+3.5	0235	0512	-4.5	0910	1151	+3.7	1433	1728	-5.6	2148		
5		0030	+3.7	0316	0545	-4.3	0942	1218	+3.7	1502	1758	-5.9	2226		
6		0103	+3.8	0358	0618	-4.0	1017	1249	+3.7	1533	1832	-6.1	2307		
7		0141	+3.8	0443	0655	-3.7	1055	1325	+3.7	1607	1910	-6.1	2352		
8		0224	+3.7	0532	0738	-3.2	1137	1405	+3.4	1646	1956	-5.8			
9	0043	0313	+3.4	0627	0830	-2.9	1228	1453	+2.9	1733	2050	-5.3			
10	0141	0414	+2.9	0731	0938	-2.4	1331	1551	+2.4	1834	2158	-4.8			
11	0246	0534	+2.7	0841	1106	-2.4	1449	1707	+1.9	1954	2322	-4.5			
12	0356	0724	+2.7	0950	1225	-2.9	1618	1858	+1.8	2121					
13		0040	-4.5	0504	0837	+3.2	1050	1331	-3.5	1741	2051	+2.2	2241		
14		0146	-4.6	0604	0930	+3.7	1142	1427	-4.5	1848	2156	+3.0	2351		
15		0244	-4.8	0656	1016	+4.0	1227	1517	-5.3	1941	2248	+3.7			
16	0052	0335	-4.8	0741	1056	+4.2	1308	1603	-6.1	2029	2336	+4.2			
17	0147	0423	-4.8	0822	1131	+4.2	1346	1645	-6.4	2112					
18		0019	+4.3	0236	0507	-4.6	0901	1202	+4.0	1423	1725	-6.6	2153		
19		0059	+4.3	0322	0549	-4.2	0938	1229	+3.7	1459	1804	-6.6	2232		
20		0136	+4.2	0406	0630	-3.8	1015	1257	+3.4	1533	1841	-6.2	2312		
21		0211	+3.7	0449	0710	-3.4	1052	1326	+3.0	1608	1918	-5.8	2353		
22		0246	+3.2	0534	0751	-2.9	1133	1359	+2.6	1643	1957	-5.1			
23	0036	0323	+2.7	0621	0838	-2.4	1219	1436	+2.1	1720	2041	-4.5			
24	0124	0411	+2.4	0714	0935	-2.1	1315	1521	+1.6	1804	2134	-4.0			
25	0217	0526	+2.1	0812	1043	-1.9	1425	1620	+1.1	1904	2242	-3.5			

Sand Island, 1nm SE of (midchannel)



Sand Island Tower, 1nm SE of (midchannel)
Predicted Tidal Current — October, 2009
Flood Direction, 107 True. — Ebb (-)Direction, 275 True.
NOAA, National Ocean Service

Day	Slack Water Time h.m.	Maximum Current Time h.m.	Maximum Current Veloc knots	Slack Water Time h.m.	Maximum Current Time h.m.	Maximum Current Veloc knots	Slack Water Time h.m.	Maximum Current Time h.m.	Maximum Current Veloc knots	Slack Water Time h.m.	Maximum Current Time h.m.	Maximum Current Veloc knots	Slack Water Time h.m.	Maximum Current Time h.m.	Maximum Current Veloc knots
1	0021	0320	-4.3	0736	1057	+3.2	1302	1549	-4.2	2003	2310	+2.7			
2	0109	0401	-4.5	0808	1118	+3.4	1334	1625	-4.8	2038	2337	+3.2			
3	0153	0438	-4.5	0839	1132	+3.5	1404	1657	-5.3	2112					
4		0002	+3.5	0235	0512	-4.5	0910	1151	+3.7	1433	1728	-5.6	2148		
5		0030	+3.7	0316	0545	-4.3	0942	1218	+3.7	1502	1758	-5.9	2226		
6		0103	+3.8	0358	0618	-4.0	1017	1249	+3.7	1533	1832	-6.1	2307		
7		0141	+3.8	0443	0655	-3.7	1055	1325	+3.7	1607	1910	-6.1	2352		