

WASHINGTON (PFD) LIFE JACKET WEAR-RATE STUDY 2010 OBSERVATION & TRAINING GUIDE



Seattle Children's
HOSPITAL • RESEARCH • FOUNDATION



HARBORVIEW
INJURY PREVENTION
& RESEARCH CENTER

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I. INTRODUCTION

Thank you for participating in the 2010 Washington State PFD Wear-Rate Study. Many injuries and deaths among recreational boaters could be prevented by consistent use of PFDs. The data we collect in this study will help Washington State Parks monitor progress in achieving higher levels of recreational boating safety.

As an observer, it will be your job to record pertinent information about boats (such as type of craft, size, etc.) and boaters (gender, age, and whether they are wearing PFDs). This guide will provide you with instructions as to how to find your viewing points, and how to record this information.

A. Personal Flotation Devices

Personal Flotation Device (PFD) is the technical term for life jackets. Washington State Parks Boating Program's main goal in funding this study is to come up with a Washington State wear-rate estimate for PFD use, as well as to look at PFD use on various types of crafts, under various weather conditions, and among passengers of different ages and genders.

II. LOCATION & SCHEDULING

A. Scheduling

You will observe for at least two 90 minute sessions. These observation periods may be at the same site (on two different days) or at two different sites (on the same or different days). Each observation should be carried out with another volunteer. The observation schedule will be variable depending on the site where you are observing.

Weather Cancellations: We want to observe boaters' use of PFDs under a variety of different weather conditions. This means that observations should not be canceled unless there is fairly severe weather predicted. If there is a passing shower, return to your car and wait it out, then continue observations and stay later to make up for lost time if possible.

If you hear that severe weather is expected for your observation weekend, contact Anna Zimmerman (206) 987-6975 to determine whether you should travel to the observation sites. See the Contact Sheet in your folder for appropriate phone numbers to call.

B. Preparation

Read this entire booklet in advance of your observation date. If you have **any** questions, make sure that you get answers **prior** to beginning your first observation.

You will need to bring to the observation site a number of items to help you complete the observations and to keep you comfortable during the day. Here is a checklist of what to bring:

Essential items supplied to you:

- ★ Digital Thermometer (to determine air and water temperature)
- ★ Pencils
- ★ Boat Observation forms (150 for each site) **ONLY USE THE FORMS THAT ARE SENT TO YOU. OBSERVATION FORMS CANNOT BE XEROXED.**
- ★ Site forms (2 for each site) **ONLY USE THE FORMS THAT ARE SENT TO YOU. SITE FORMS CANNOT BE XEROXED.**

Please bring your own: BINOCULARS

You may also want to bring:

- ★ Appropriate clothing to protect you from sun, rain, etc.
- ★ Folding chairs (consider buying cheap ones when you arrive and donate to a needy family when you leave)
- ★ Sunscreen, hats, sunglasses
- ★ Bug/mosquito repellent
- ★ Plenty of water/beverages and lunch/snacks

C. Observation Areas

Find an unobstructed view of recreational boats from somewhere on the shore to begin your observations.

WHEN: Observations should take place on Friday August 27th, Saturday August 28th, Sunday August 29th and/or Friday Sept 3rd – Monday Sept 6th.

TIME: Unless you are observing a specified fishing area you should plan to observe between the hours of 12:00 -6:00.

These are the characteristics of the observation area you should be located at:

- ★ Provides unobstructed views of recreational boats from the shore
- ★ Allows public pedestrian access (you)
- ★ Is situated along a shore narrowing (if possible) so that boats pass close to the shore
- ★ Is not too close to docking areas unless no alternatives are available (since boaters may remove their life jackets as they approach)

III. OBSERVATIONS (DATA COLLECTION)

A. General Observation Information

How many boats will you observe? The number of boats of course varies from year to year at each site, depending on many factors (weather, the economy, etc). We can provide numbers from the previous year to give you an idea. The average is somewhere around 30 boats an hour.

- ★ The objective is to collect ACCURATE data on all of the boats that are visible to you (via binoculars) from your observation location. We want to document the many different types of recreational boats that can be found on these bodies of water. While we would like you to observe as many boats as possible during the 90 minutes of observation at each site, *remember that it is better to observe fewer craft accurately than many craft inaccurately.* If you do not see any boats during your 90 minute observation time, and you are able and willing you can extend your observation time. However, you will not be paid for any time beyond 90 minutes.
- ★ Each observation should record a unique boat. We do not want you to observe the same boat multiple times. However, if you see a boat at a different period of time with a DIFFERENT configuration of occupants OR DIFFERENT PFD WEAR STATUS, then you may treat that as a NEW observation and record that boat again.

B. WHICH BOATS SHOULD YOU OBSERVE?

This study is a study of PFD use among recreational boaters only.

- ★ Therefore, you should **NOT** record observations of commercial fishing boats, professionally chartered boats, water shuttles, guided rafting or guided canoeing parties, ferries or commuter boats, or any official law enforcement boats.
- ★ You **SHOULD** include people on personal watercraft (PWCs which are commonly known as jet-skis or wave-runners), sailboards (wind-surfers), kayaks, rafts, inner tubes, canoes, rowboats, paddleboards and pedal boats in addition to the standard powerboats and sailboats that are obvious inclusions.

C. WHICH BOATS & PASSENGERS DO YOU RECORD?

- ★ Your ability to detect PFD wear through the binoculars (or naked eye) will determine whether or not you record a boat: if the craft is too far away for you to tell whether or not the boaters are wearing PFDs, you **DO NOT** record data on that boat. If you **CAN** determine **SOME** of the boaters' PFD use then you **SHOULD** include that boat in your

observations. Record data on the occupants that you can see and leave the others blank if you cannot determine their PFD status.



EXAMPLES OF A BOAT THAT DOES NOT GET RECORDED

D. The Roles of Team Members

Two people are necessary for each observation so that one can act as the **Observer** (using binoculars to call out information about the boat and boaters) while the other can act as the **Recorder** (taking down the information on the **BOAT FORM**). The **Observer** and **Recorder** should switch roles every 45 minutes (or as necessary) to fight off fatigue. If one team member has previous observation experience, then this person should take the first turn at being the **Observer**.

In many cases, it is possible to record information about the boat (type, size, propulsion, operation and activity) without the use of binoculars. Therefore, the **Recorder** may want to fill in some of that information while the **Observer** focuses on the task of determining the boaters' ages, genders, and PFD use. As necessary, the **Observer** should also call out information about the boat to confirm what the **Recorder** is taking down. **It is very important that the Observer and Recorder make sure they are describing the same craft!**

Each team may work out their own system of how the **Observer** should call out the information to the **Recorder**. We have found that it helps for the **Recorder** to ask brief clarifying questions to the **Observer** (i.e. Operator's gender?) so that it is clear you are both talking about the same characteristic or if the observer did not mention that detail in the call out.

Examples of short hand calling out of information:

2 adult males wearing = 2 men, both wearing old-style

2 males wearing new = 2 men, both wearing (inflatable) life jackets

Couple not wearing = male operator, female passenger, both 18-64, neither wearing life jackets

Elderly couple not wearing = male operator, female passenger, both 65+, neither wearing life jackets

Teen boy wearing = male, 13-17, old-style life jacket

E. SITE FORMS:

****Site forms should NOT be xeroxed, and only original forms we provide you with should be used. Xeroxing distorts the format and will not allow for proper scanning of the forms.**

A copy of the site form can be found in your training folder. Each observation site has one site form. At the top, you will find the following: SITE NAME and SITE CODE. Note that there is some duplication between the site form and the passenger form which is necessary to link the two forms. *It is very important to use the correct boat forms with the matching site form.* Please check that they match before beginning observations.

Fill in the **Observer Names**. The site name and site code will be pre-filled. You should complete the observation date and day of the week, followed by the observation start and end times (90 minute or more observation time and if it is less explain why on the back of the sheet).

You have been given **two** site forms: Site Form 1 and Site Form 2. Begin your observation with recording site conditions on Site Form 1. After filling out Site Form 1, you should check the Site Form 1 box on all of the Passenger Collection Forms.

If at any point during your 90 minute observation the water conditions or weather conditions change, stop filling out Passenger Collection Forms and fill out Site Form 2 in order to reflect the new weather and water data. (water and air temperature readings do not need to be filled out on the 2nd form) The Passenger Collection Forms filled out after this point should reflect this change in site condition data by checking the Site Form 2 box in the upper right hand corner.

1. SITE CONDITIONS (Weather & Water Data)

a. Water Temperature

The water temperature should be recorded before you begin observations. When you arrive, carefully scout a place where you can reach the water's edge and use the digital thermometer to record the water temperature.

b. When to Record Weather Data

At each site, you will record the weather at least once. It is VERY important that we have weather observations for the time block that you observe boats. Your first weather observation should occur when you get to the site. Record the TIME period and then fill in the remaining categories to describe the weather conditions.

If the weather conditions change fill out **SITE COLLECTION FORM 2**, and describe the new conditions.

c. Air Temperature

Use the digital thermometer to take the air temperature. Make sure that it is dry when you are doing so. **ROUND TO THE WHOLE NUMBER.**

d. Water Conditions

Indicate whether the water is flat with no waves, calm (with waves less than 6 inches high), choppy (with waves 6 inches to 2 feet in height), or rough (with waves over 2 feet). If the water conditions changes during your 90 minute observation period please fill out a **SITE COLLECTION FORM 2**, and reflect any changes in weather/water conditions in this second form.

e. Current

Indicate whether the current is strong, moderate, or weak/none. Lakes will have little or no current, while rivers will often be moderate or strong in current. Puget Sound currents may vary from weak/none to strong depending on the site.

f. Visibility

Decide if the visibility is good (clear), fair (hazy or somewhat foggy), or poor (very foggy or very hazy).

g. Weather Conditions

Finally, decide which of the following terms best describes the current weather conditions: sunny, partly cloudy, cloudy, raining, or stormy (e.g. thunderstorms).

h. Water Conditions

Indicate whether the water is flat with no waves, calm (with waves less than 6 inches high), choppy (with waves 6 inches to 2 feet in height), or rough (with waves over 2 feet). If the water conditions changes during your 90 minute observation period please fill out a new SITE COLLECTION FORM, and reflect any changes in weather/water conditions in this second form.

i. Current

Indicate whether the current is strong, moderate, or weak/none. Lakes will have little or no current, while rivers will often be moderate or strong in current. Puget Sound currents may vary from weak/none to strong depending on the site.

j. Visibility

Decide if the visibility is good (clear), fair (hazy or somewhat foggy), or poor (very foggy or very hazy).

k. Weather Conditions

Finally, decide which of the following terms best describes the current weather conditions: sunny, partly cloudy, cloudy, raining, or stormy (e.g. thunderstorms).

F. Passenger collection form

1. General Information

To record information about the craft and boaters, you will use a Passenger Collection Form. Each PASSENGER FORM has room to record data for **one** craft.

You will be supplied with enough sheets to record data on **150** boats per site. This should be more than enough.

Please use the pencils provided to fill in the forms. **DO NOT USE PENS.** Boxes should be filled in with an X, not overlapping with another box. If you make a mistake, erase it fully using the eraser provided.

At the end of the day check your sheets to make sure boxes are filled in completely before sending the forms back to Children's Hospital. Also, please erase any stray marks or double marked squares.

2. Form Coding

For each site, you will be given a specific packet of forms that are labeled with a site code and observer code. **Use a separate packet of sheets for each site you observe.** It is important that you do not use forms intended for one site at another site.

3. Filling out the forms

When you begin to record information on a new passenger collection form, remember to fill out the OBSERVER NAME, DATE and DAY OF WEEK at the top of the page. This is the only way we can connect your boating observations to the information that you are recording on the Site Form.

Now we will walk you through each piece of information that you will need to record.

BOAT & PASSENGER DATA

a. TYPE OF BOAT and PROPULSION

For each boat you see, you must first record BOAT TYPE: whether it is a POWERBOAT, PADDLE BOAT, SAILBOAT or OTHER BOAT.

If the craft is a **POWER BOAT**, then choose one of the six options in the corresponding box to designate the type of powerboat observed:

- ★ **Open Motor boat:** These are small, sporty craft used for day cruising, water skiing, and fishing. They may have decked-over bows, or have seats in the bow area in front of a windshield (called a bow rider). The windshields touch the sides of the boat. Boats with a small covered or enclosed area used mainly for storage should be classified in this category. These boats will typically be in the “16-20 feet” or “21-25 feet” ranges.
- ★ **Cabin Motor boat:** Any powerboat with a cabin large enough for persons to enter and used for more than storage should be considered a cabin cruiser. Cabin cruisers are generally larger (sometimes in “21-25 feet” ranges, but usually in the “over 25 feet” range) and are used for day cruising as well as for more extensive voyages. A covered bow with no seats is another key characteristic, as well as bow railings and bow windows.
- ★ **PWC (Personal Watercraft):** PWCs are commonly known as jet-skis or wave-runners. They are small, highly maneuverable power-driven vessels that generally hold one or two passengers but sometimes have 3 or 4 people.

If the craft is a **PADDLE BOAT**, then choose one of the three options in the corresponding box to designate the type of paddle boat:

- ★ **Kayak:** Kayaks are more pointed, lower to the water and usually have just a hole in center where person sits. Sometimes the “hole” is covered with a water protective “skirt”. Usually the person is using a two bladed paddle—one at each end—in a continuous motion stroke. Kayaks will often be observed on river and lake sites, though you may also see them along the coast.
- ★ **Canoe:** They are open across the top and usually people sit on seats although sometimes they are kneeling and use paddles to move the canoe through the water. However, in some instances small trolling motors (still record as paddling) can be attached to the canoe (this is a rarity, but can happen). In Hawaii you will see as many as 8 passengers in an outrigger canoe.
***For both canoes & kayaks if there is more than 1 person in the boat, the person in the back seat is considered the “Operator” when filling out gender, age, and life jacket use.**
- ★ **Rowboat/Dinghy:** Small paddled boats that are used for tender or other short trips are often classified as rowboats or dinghies. They are almost always less than 16 feet in length. An example of a typical use would be to transport a boater from

the dock to a boat anchored in the harbor. Sculls with 1 or 2 people are classified as rowboats. Sculls with 3 or more persons and crew boats are not recorded.

- ★ **Standup Paddleboard:** A surf board that a passenger stands on and paddles.

If the craft is a **SAILBOAT**, then choose one of the two options in the corresponding box to designate the type of sailboat:

- ★ **Sailboat:** A larger sailboat with a cabin that persons can enter is a cabin sailboat. These can be used for day cruising as well as longer over night voyages. Larger catamarans (“25 feet and over”) with cabins should be included in this category
- ★ **Sailboard:** A sailboard (also known as a windsurfer) is a surfboard-like object attached to a sail. The passenger stands on the board and directs the sail with his upper body. Sailboards are always “under 16 feet” in length.

If the craft is an **OTHER BOAT** (besides one of the boat types described above) then choose one of the five options in the corresponding box to designate the type of **OTHER BOAT**:

- ★ **Inflatable/Raft:** You may observe inflatable dinghies or inflatable rafts. Dinghies will be smaller, and rafts larger, though **any** inflatable craft should be categorized here. Do not record guided raft trips.
- ★ **Paddleboat:** a boat propelled by one or more paddle wheels
- ★ **Inner tubes:** An inflated tube used for riding or floating. Only classify inner tubes in this category if an individual is using the inner tube for floating or drifting. Do not classify individuals in inner tubes who are being pulled by a motor boat in the inner tube category, instead classify them as water skiers. Also, do not classify individuals who are using an inner tube in a designated swimming area.
- ★ **Other:** If you observe a craft that does not fit into any of the other categories listed, classify it here. You should rarely have to use this category, but it is provided in the event that you observe an unusual type of craft.

b. SIZE

Next you will record the size (in feet) of the craft as: a) “under 16 feet”; b) “16-20 feet”; c) “21 -25 feet”; d) “greater than 25 feet”. As mentioned above, there are certain kinds of craft that generally fall into one of these categories. However, the best way to judge the size of craft is through practice. If a boat appears to be on the borderline between two size categories, use your best judgment in choosing one. Boats are generally longer than they seem when in the water and when far away: “under 16 feet” is small—jet skis, rowboats, inflatables, smallish canoes, white water kayaks and very smallish skiffs. Two person canoes & kayaks are almost always larger than 16 feet. Cabin cruisers and Cabin Sailboats are over 21 feet. You need to develop a sense of these boundary size points. At the

beginning of your observations, ask a few boaters who pass nearby what the length of their boat is to get you into the groove.

Sometimes the length of the boat will be inscribed on the bow (front) or near the back of the boat along with the name of the make/model. For example, you may see inscribed, “Crestliner 162” or “Lund 184”, which would mean the lengths are 16.2 feet and 18.4 feet, respectively. You may even see something similar to this, “Lund 2060”, which means the length is 20.6 feet or 2200 which means 22 ft. If you can locate this on the boat, please use this to classify the size of the boat. Also, sail boats many times have the size indicated in the top triangle of the sail.

c. MOVEMENT

The category, **MOVEMENT**, refers to the motion of the craft you are observing.

Boats which are cruising along may be **MOTORING** if they are using only a motor to cruise, or **SAILING** if using a sail. Some sailboats may be using both a motor and sail simultaneously to maximize speed. This is often the case, but is it difficult to tell if a sailboat is using its engine in addition to its sail. If you see a sailboat with its sail up, then choose **SAILING** regardless of whether it may also be using its engine.

The remaining categories: **ROWING/PADDLING**, **DRIFTING**, and **ANCHORED** are self-explanatory. If a boat is **ANCHORED** near you, make sure to observe it only once during the course of the observation. If a boat is moving only through propulsion by a trolling motor, then it is considered to be drifting.

d. ACTIVITY

ACTIVITY refers to a particular activity the craft is involved in during the time of the observation. Choose only one category that best describes the activity occurring on the boat.

- ★ **PLEASURE** is a catch-all category that is used when people are just going along in their boats, and doing none of the following activities. **This is the most frequently used category.**
- ★ **WATERSKIING** means a boat is pulling a water-skier or any towed person while you observe them. (See later explanation about designating who is the water-skier or being towed). Some boats may be pulling multiple people, a tube with multiple people in it, or multiple tubes.
- ★ **WHITE WATER** is reserved for river situations when the current is strong and the waves are tallish—maybe even showing “white caps”. If boats are passing your location where it is not so much white water but “around the bend”, then you can

still mark them as **WHITE WATER** activity. This is usually a situation where many more people in canoes and kayaks are wearing life jackets. *Be careful not to record guided rafting trips.*

- ★ The term **RACING/HIGH SPEED** is reserved for craft moving very fast—whether they are in a formal race or just speeding for the thrill of it. For sailboats, “moving fast” is a relative term and instead is marked when you see a bunch of sailboats moving together around a “course”.
- ★ **FISHING** means some of the people in the boat are actually fishing while you observe them. They could have lines in the water while they are slowly moving—e.g. trolling, or they could be anchored and standing up with poles in the water. **Both of these situations count as fishing.** If they have poles in the boat and look like they are going fishing this does not count as fishing (poles need to be in the water to count) but instead are classified as “intent to fish” (see below).
- ★ **INTENT TO FISH** is to be used if you see clear evidence of fishing gear (rods/reels/trolling motors not in use) hanging or positioned around/in the boat, but no one is actually fishing, then this will be counted as **Intent to Fish**.
- ★ **SWIMMING** off the boat is reserved for situations when the boat is drifting or anchored and people are swimming around the boat and maybe even diving off the boat into the water.
- ★ The category **OTHER** is reserved for specific activities that would be unusual—hunting from a boat, or being on the boat doing maintenance.

e. PASSENGER DATA

The boaters’ characteristics, **AGE** and **GENDER** and use of **PFDs**, are the most crucial parts of this study. As mentioned before, the recorder may want to focus on filling in some of the characteristics of the craft while the observer uses the binoculars to decide on the boaters’ **AGE**, **GENDER**, and use of **PFDs**.

While the categories are listed one at a time below, you may actually find it easier to fill out all the information on one passenger before moving on to the next.

i. Operator vs. Passenger

We are interested in finding out whether the Operator’s PFD use differs from that of other passengers. It is a good idea to record the characteristics of the Operator first (in the row labeled “OP” – listed first on the form), and then move on to the passengers (in the rows labeled “P”). For each craft, there is room to fill out information on up to ten boaters (one operator and nine passengers). If there is no operator (if, for example, a boat

is anchored), then chose the adult who is closest to the wheel as the operator). **If there are more than ten passengers, then fill in information about the passengers wearing life jackets first.** Then fill in information about the remaining passengers up to a total of ten. Remember that for *canoes and kayaks* with more than one person in them the person in the *back* is considered the operator.

ii. Gender

Determine the gender of each passenger and mark under M (male), F (female), or “Unk” if the gender is unknown. The “Unk” category is used when you can’t tell gender—mostly for very young children or where people are far away or when they are wearing jackets and hats. Generally speaking, use your best judgment to make a good guess as to the individual’s gender.

iii. Age

Passengers should be classified into five different age categories (0-5 years, 6-12 years, 13-17 years, 18-64 years, and 65+ years). The boundaries of the age categories are where you will have difficulty: *is that girl 12 or 13?* Try to develop a sense of what the differences are between a 5 or 6 year old and a 12 versus 13 year old are. Some potential indicators may be height and weight. If you are unsure of a passenger’s age but believe he/she is 18 or older, then mark the category 18-64 as a default.

f. PFD Use and Type

Last but most important is **PFD** use. Depending on if each passenger is wearing a PFD fill in YES for OLD (Type I, II, III) or YES for NEW (Type V), NO, or Unknown for each person on board. Record a boater as wearing a **PFD** only if you can definitively tell whether or not that he/she is wearing a **PFD** or not. If you can not determine whether a particular boater is or is not wearing a PFD then you record nothing about that person. The exception to this is for the operator...since there must be an operator....record age, gender and leave PFD blank but put note in margin that you could not determine. Remember, **PFDs** now come in various colors and shapes. OLD are traditional life jackets which provide flotation through their bulk. NEW are inflatable style life jackets. NO means no life jacket is worn.

There are many different kinds of PFDs. Traditional life jackets are often bulky and brightly colored. Some are full vests as opposed to the old standard around-the-neck life jackets. All of these traditional types of PFDs are classified as “old” on your observation form. Some of the new inflatable models of PFDs look more like suspenders - these contain small tubes of carbon dioxide which inflate either manually, by tugging on a strap, or automatically, when they are exposed to the water. Other new inflatable models

fit around the waist like a belt pack or a fanny pack, and similarly inflate from a CO₂ cartridge. Only these inflatable types are classified as “New” on your observation form. *Children under the age of 16 wearing always are classified as OLD since inflatables are not allowed to be worn by anyone under 16.*

We ask that you differentiate if possible between the traditional life jackets which are usually bulkier from the newer inflatable PFDs that are more compact and inflatable. These styles include suspenders and “fanny packs” that use carbon dioxide cartridges. PFDs under the “old” category should include vests used by people on PWCs and in kayaks & canoes. See the cover of this guide, the PFDs on the left should be categorized as new, the ones on the right as old.

g. WS (Water-skier)

This column is used to indicate which person, or persons, who are actually being pulled by the boat—either on water-skis or on a tube or other inflated device designed for this purpose. For each of these people indicate if they are a water skier by marking yes or no. For people in the boat pulling others, they are not water-skiers—even if they look like they are getting ready to go “next”. Since the operator cannot be operating the boat and waterskiing at the same time we have left out the box for this line. Obviously—only boats whose activity is waterskiing—should have persons marked as water-skiers.

IV. FINISHING UP!

When you have completed a site, please look over the forms. Make sure you have completely checked boxes, and have erased any stray marks on the sheets. Then, put the used BOAT FORMS in the corresponding envelope, with the SITE FORMS on top. Please return blank forms as well. Send the designated envelope that has been pre-addressed and stamped back to Anna Zimmerman at Seattle Children's Hospital.

Anna Zimmerman
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