BluePort AI — Field Testing Guide for Waste Detection

Practical instructions for smartphone data collection (ports & coastal waters).

Purpose
This short guide explains how to collect high■quality mobile photos to build an initial dataset for marine/port waste de

1) Setup
- Install and run your Telegram Waste Bot (local or cloud).
- On your phone, open the bot and press Start.
- Ensure good battery and storage; keep lens clean.

2) How to Take Good Photos
- One item per frame when possible (bottle, can, cup, foam, net).
- Neutral background, natural light, avoid motion blur.
- Fill 60–80% of the frame with the item; keep edges visible.
- Capture multiple angles if uncertain (top, side, perspective).
- Avoid people or identifiable objects (privacy). If present, blur later.

3) Recommended Classes (Initial)
- Plastic: PET, HDPE/PEAD, PP, PVC, PS (foam)
- Glass: clear, amber, green
- Metal: aluminum, steel/ferrous
- Paper, Cardboard, Organic, E-waste, Other

4) Naming & Organization
- File name: YYYYMMDD_location_class_###.jpg
e.g., 20251014_Pier3_plasticPET_001.jpg
- Folders:
/data/raw   original photos
/data/processed cropped/resized
/data/logs   CSV exports from the bot

5) Logging (CSV)
- Minimum columns:
timestamp_utc, location, class, confidence, feedback_correct
- Export from the bot with /export and clean with:
python scripts/export_cleaner.py data/logs/waste_history.csv data/logs/waste_history_clean.csv --location "Pier 3"

6) Quality Checklist (Field)
- [ ] Good lighting (no strong backlight or night glare)
- [ ] Sharp focus, item centered
- [ ] 1 item per frame (or clear separation)
- [ ] Class label chosen correctly
- [ ] Location noted

7) Safety & Ethics
- Follow port safety rules (PPE, access permissions).
- Keep safe distance from edges and moving equipment.
- Respect privacy; avoid faces and license plates.
- For water shots, avoid risky angles; use zoom.

8) Next Steps
- After 300–500 labeled photos, start detector training (YOLOv8-seg).
- Build a hotspot map (per pier/berth/channel) and compute KPIs: items/hour, items/m², % plastic.
- Plan camera or drone pilot based on hotspots.