

As an underwater photographer with over a decade of experience, I've learned that dealing with data backup on diving trips is as critical as maintaining your **underwater camera housing**. The salty, humid environment, combined with the mechanical nuances of underwater photography gear, creates unique challenges that make a secure and reliable backup strategy indispensable.

This post tackles a common scenario many divers and photographers face: *having only one external drive* while on a trip. How do you ensure your precious images and videos stay safe? How do you avoid potential flooding inside your housing, prevent corrosion on buttons and hinges, and manage your data wisely? Let's dive deep and come up with a robust strategy.

Why Backup Matters on a Dive Trip

Your dive trip is usually a short window packed with limited shooting opportunities. Losing your raw captures or edited files can be devastating. The underwater environment, especially saltwater, is harsh on electronic gear:

- **Saltwater residue** can cause corrosion on **buttons, dials, hinges, and electrical connections** of your camera housing.
- Water ingress in housing can ruin both your camera and memory cards.
- Shared rinse tanks could become an accidental battleground for your delicate housings if they bang together.
- Humidity can cause external drives to malfunction or corrupt your data.

Backing up effectively protects you from all these risks, preserving your memories and your investment.

Clean and Care for Your Housing Before Opening

One of the most overlooked steps that can prevent data losses indirectly is proper handling of your **underwater camera housing**. Before opening your housing [divephotoguide](#) after a dive, always rinse off *saltwater* thoroughly, preventing salt crystals from forming inside.

Steps for Saltwater Removal

1. Use a fresh water rinse tank — preferably one that is dedicated and not shared with other photographers or gear.
2. Submerge the entire housing and gently press buttons and dials underwater to flush out salt deposits.
3. Inspect **hinges, buttons, and electrical connection points** with a small waterproof flashlight dedicated to o-ring checks. This helps spot residual salt or debris before opening.
4. Dry the outside of your housing thoroughly before opening it. Even a small amount of moisture inside can cause damage when you handle cards or electronics.

This routine keeps corrosion at bay, protecting not just your gear but also your data stored inside your memory cards.

Safe Handling in Shared Rinse Tanks

A common irritation I encounter on trips with multiple photographers is housings banging into each other in rinse tanks. These unavoidable collisions can scratch or damage your housing, potentially breaking seals or buttons — triggering leaks that might flood your camera or corrupt cards.

Here's how to avoid the headache:

- **Use individual rinse cages or compartments** inside tanks to physically separate housings.
- Label your housing with masking tape or an easily visible tag — not only to avoid mix-ups but to gently remind others where your gear is.
- Keep rinse tanks free of other gear like flash units or underwater strobes that can roll into your housing.

Remember: a single ding could cause a leak, and that's a route to flooding, expensive repair, and data loss.

Dry Workspace Habits to Avoid Corrosion

Once you open your housing to swap cards or cables, your workspace should be your sanctuary. Poor habits here speed up corrosion and increase risk of data mishaps.

My Dry Workspace Checklist:

- Wipe down the entire workspace with a dry cloth before placing any gear.
- Avoid humid or damp areas. If you're on a boat, try to set up an indoor or shaded table away from sea spray.
- Have dedicated storage containers for wet gear separate from your backup devices.
- Keep your labeled chargers, cables, and cards neatly arranged to prevent confusion and accidental damage.
- Always use your tiny flashlight (yes, I have one just for o-ring inspections!) to check seals immediately before opening housings.

Backup Workflow: Use a Second Independent Device

Backups are about redundancy, and when you have only one external drive, risk management becomes key. It's tempting to just trust that single device, but here's a safer approach:

1. **Keep Files on Card Until Backup Is Verified:** Never erase or format your memory card on day one without confirming that your files exist safely on your backup device.
2. **Use a Second Independent Device:** Besides your external drive, use an alternative storage medium — this could be a second smaller external SSD, a laptop's internal drive, or even a high-capacity SD card. This second device should be physically separate (even stored in a different bag) to reduce loss risk.
3. **Verify Both Copies:** Perform a copy verification process — comparing checksums or simply reviewing file counts and spot-checking images on each device to make sure the files are intact.
4. **Make a Second Backup Before Editing:** Don't fall into the trap of spending hours editing photos before backing up the second copy. Edit only after you have at least two verified backups.

Why Verification Matters

File transfers can silently fail, especially in humid or unstable power conditions, leaving you with incomplete backups. Verifying ensures your precious dives' shots are truly safe.

Practical Backup Setup for Trips with One External Drive

Step Action Description Why Important? 1 Keep RAW files on SD card after transfer. Don't erase or format the card until backup confirmed. Prevents accidental data loss before duplication. 2 Copy files to external drive (primary). Connect external drive and transfer files directly. Centralizes your data for easier management. 3 Copy files to a

second independent device. Use laptop internal storage or another device. Creates true redundancy to reduce risk.

4 Verify both copies Check file counts, sizes, and open a few key shots. Confirms data integrity and completeness.

5 Format SD card only after successful backup. Clear card to use again on next dives. Protected: ready for next shots without risk.

Bonus Tips for Your Backup Strategy

- **Label chargers and cables** with masking tape to avoid confusion—and to keep your setup organized and fully functional.
- Use a tiny flashlight for **o-ring inspections** after every rinse and before opening your housing.
- Avoid leaving cameras or external drives in **humid, wet, or direct sun areas**.
- Regularly check the condition of your housing's **buttons, dials, hinges, and electrical connections** throughout your trip for any signs of corrosion or salt buildup.
- Don't start editing your photos until you've made and verified your backups—trust me, I made that mistake myself once and hated it!

Conclusion: Backup is Your Dive Buddy

When you only have one external drive on a dive trip, your backup plan needs to balance careful protective handling of gear with redundancy in data storage. Keep your files on your memory card until you've secured and verified two independent backups. Maintain your equipment meticulously—especially flushing out saltwater before opening your **underwater camera housing** and avoiding rough contact in rinse tanks.



Remember: Your pictures are the truest memento of your underwater adventures. Treat their protection with the same care you give your housing's *buttons, dials, hinges, and electrical connections*. The satisfaction of a safe backup routine is worth every minute.



And if you want my number one quirk? I label every charger, cable, and backup drive with masking tape—because losing a charger or mixing cables can ruin a perfectly executed backup plan!

Safe diving and happy shooting!