

Anglers Almanac Pilot for Deep-Water Grouper (DWG)

The deep-water grouper (DWG) complex (yellowedge, snowy, warsaw, and speckled hind) presents unique challenges for recreational fisheries monitoring. These species occur at low encounter rates, are frequently misidentified at the dock, and are often landed by a small but dedicated group of offshore anglers who do not typically launch from or return to public marinas where traditional dockside surveys occur. As a result, current programs like MRIP and LA Creel struggle to consistently capture accurate data on DWG catch and effort. The most recent yellowedge grouper stock assessment found the stock to be undergoing overfishing, leading to reduced catch limits for the entire complex. Without better data, managers are forced to make decisions based on high uncertainty, which can unnecessarily restrict access while failing to prevent localized depletion.

Louisiana's LA Creel and Recreational Offshore Landing Permit (ROLP) illustrate how state-managed systems can respond to these gaps. LA Creel achieves significantly higher precision than MRIP by employing a near real-time, basin-stratified sampling approach, enabling timely landings estimates at regional scales (such as basins or modes of fishing), reducing statistical error, and ensuring that monitoring effort is focused where most effective. ROLP, meanwhile, serves as a specialized registry of anglers who fish in federal waters off Louisiana and land their catch in-state, making it possible to directly engage this hard-to-reach group. Together, these tools provide a model for how other states might implement flexible, responsive monitoring strategies for data-poor fisheries.

Given the limitations of traditional surveys, alternative recreational harvest reporting methods, particularly voluntary app-based reporting paired with validation, may be more appropriate to augment current state systems. For DWG and similar fisheries, such tools offer a pathway to improve data precision, reduce bias, and strengthen the scientific foundation for stock assessments and management decisions.

I. Program Design and Technical Foundations

Governance will be led by a multi-agency Steering Committee, with clear roles defined across federal and state partners. Louisiana's LA Creel and ROLP models provide the foundation for a scalable, tech-enabled pilot that builds off proven strategies and integrates modern tools to overcome DWG data challenges. This group will define roles and responsibilities, adopt a data governance policy covering ownership, access, quality assurance, and sharing, and conduct periodic technical reviews to maintain scientific integrity. On the technical side, the Anglers Almanac app will be customized with DWG-specific fields and prompts, incorporating automatic timestamps, GPS location, mandatory photo submissions, and AI-assisted species identification. The platform will be

supported by a secure backend designed for redundancy, low-bandwidth offshore functionality, and cross-platform compatibility.

Participant management will rely on opt-in registration with electronic consent, training resources, and the assignment of unique angler and/or vessel IDs. Profiles will include preloaded vessel and contact information, and optional onboarding at marinas and fishing events and social media will help build visibility and compliance. An incentive option will also be considered that focuses on value-added insights rather than prizes. The app will serve as a digital logbook, allowing anglers to track and analyze their own trips while also accessing aggregated, anonymized data from other users, helping them identify patterns, plan better trips, and contribute to management without disclosing individual fishing locations.

II. Summary of DWG Observations in La Creel Dockside Data (2022–2024)

This section summarizes the observed presence of key Deep-Water Grouper (DWG) species in the Louisiana La Creel dockside intercept program across three years (2022–2024). The focus was on four federally managed DWG species.

Total Raw Observations LA (2022–2024 Combined):

- Yellowedge Grouper: 36
- Snowy Grouper: 11
- Speckled Hind: 6
- Warsaw Grouper: 6

Landing Patterns: Most observations occurred at Venice Marina and Cypress Cove Marina, with fish reported from offshore areas such as Louisiana Grid 13 and the Mississippi River Delta. DWG landings primarily occurred between May and August, aligning with the federal DWG open season (typically January 1–June 30).

Implications for Pilot Design: These data validate the presence of DWG in recreational landings and support prioritizing Venice and similar ports for intercepts. Low observation volumes reinforce the need for supplemental self-reported data. Anglers Almanac is well-positioned to address this data gap and improve spatiotemporal resolution for DWG management. We know there are passionate groups of Deep Drop Anglers on the west side of LA, unreported.

LaCreel DWG Estimated Landed Average (count) RSE Range (min -max %)

| | Avg (count) | RES Min | RSE Max |
|--------------------|-------------|---------|---------|
| Snowy Grouper | 63 | 41 | 91 |
| Speckled Hind | 37 | 64 | 95 |
| Warsaw Grouper | 35 | 35 | 97 |
| Yellowedge Grouper | 544 | 29 | 79 |

Based on LA Creel extrapolations, recreational landings of key Deep-Water Grouper species in Louisiana during 2022–2023 remain relatively low, with Yellowedge Grouper comprising most observed landings. Relative standard errors (RSEs) remain high for most species indicating substantial uncertainty due to limited sample sizes. These data highlight the rarity of DWG landings in recreational dockside samples and reinforce the need for supplemental validated self-reported data collection to improve precision.

Data-poor recreational fisheries, such as DWG, are often underrepresented in monitoring systems. Targeted self-reporting with dockside validation can reveal higher catch rates and broader participation than previously estimated, improving assessments and management by reducing uncertainty and overly conservative assumptions.

III. Data Collection Workflow

Angler Workflow (via App):

- Anglers log each trip by taking a photo—whether a DWG fish is kept, released, or if no catch occurred.
- Each photo automatically records date, time, and GPS location.
- Length can be auto-captured from the image or measured using a ruler or reference object.
- Depth reporting is optional.
- Photo submissions are mandatory for all DWG encounters, including zero-catch reports.
- The app flags incomplete submissions, issues reminders, and stores data locally until it auto-uploads when connected to Wi-Fi or a network.

Validation Workflow (Dockside Intercepts):

- Validation ports are selected in each Gulf state based on historical effort and landings data.
- At least 30% of registered-user trips will be validated through intercepts at key marinas during peak return windows or using pre-trip notifications.
- Staff confirm participation by checking Angler ID and comparing app-submitted data with dockside observations.
- Validation includes species ID, fish counts, and lengths, with photo matching done via AI-assisted tools and human review.
- Discrepancies are logged in a secure database to calculate error rates and generate correction factors for analysis.

IV. Validation, Error Correction, and Expansion

Trip Matching and Quality Control:

- Self-reported trip logs are linked to dockside intercepts using unique angler and/or vessel IDs.
- Each matched record is cross-checked for:
 - Species identification (via photo and dockside review)
 - Catch counts (reported vs. observed)
 - Length measurements
- The system calculates error rates for species ID, lengths, and discard status.
- Correction factors are developed based on recurring discrepancies (e.g., misidentification or underreported lengths) and applied to the full dataset.
- Submissions with unverifiable information (e.g., unclear photos, missing measurements) are flagged for exclusion or statistical adjustment to avoid bias.

Weighting and Expansion:

- Validated self-reported data are statistically weighted at the state level to reflect variation in angler type, region, and season.
- State-specific weights ensure compatibility with LA Creel, MRIP, or other monitoring frameworks.
- Dockside validation provides bias correction for species misidentification and underreporting, improving catch composition accuracy.
- Aggregated results produce Gulf-wide catch estimates with stronger precision than current programs allow.
- While the primary focus is catch, this approach lays the groundwork for future integration with effort estimation, supporting more complete, state-calibrated harvest assessments.

| Validation Component | Who Performs It | Purpose |
|-----------------------------|---------------------------|--|
| Angler ID check | Dockside staff | Match trip to app submission |
| Species ID & length verify | Staff + AI image matching | Confirm accuracy, detect misreporting |
| Error logging | System | Feed into correction factor development |
| Submission quality filter | System | Flag missing or unclear data for exclusion |

V. Management Benefits and Application

This pilot doesn't seek to replace MRIP or LA Creel, it fills a precision gap. By focusing on catch data, not just effort, and integrating self-reported and validated records, it delivers timely, state-integrated estimates that build trust among stakeholders and support better, more accountable management. The DWG pilot delivers direct benefits across every management scale. For the Gulf Council, it enables near-real-time monitoring of recreational harvest, strengthens in-season ACL tracking, and provides the confidence needed to evaluate management alternatives such as fixed seasons, bag limits, or depth-based closures, just as occurred when red snapper transitioned to an in-season quota fishery. For NMFS, the pilot improves the quality and resolution of recreational data used in stock assessments by providing detailed discard estimates, species-specific size distributions, and comparative data to recalibrate MRIP-FES. At the state level, the program adds supplemental information to refine management strategies, especially for marinas not currently covered by federal dockside programs, while also building public trust through angler participation. Together, these contributions create a unified framework that reduces uncertainty in DWG assessments and supports more adaptive, science-based management across the Gulf. Building on the success of state-managed tools like LA Creel and ROLP for red snapper, the pilot represents a next-generation approach: combining the strengths of that model with modern tools such as mobile self-reporting, photo validation, and AI species recognition to meet the challenges of data-poor fisheries like DWG.

VI. Evaluation and Path to Integration

If approved, the pilot will follow a staged process to ensure rigorous evaluation. Early in the implementation phase, the Steering Committee will convene to finalize the plan, tune the app to DWG requirements, and test the reporting and validation functions. Concurrently, anglers will be recruited and dockside intercepts launched, with progress reviewed mid-pilot to assess reporting rates, compliance, intercept coverage, and preliminary bias estimates. Technical issues and user feedback will guide necessary adjustments. At the conclusion of the pilot, a final technical report will present validated catch and discard estimates, statistical models, error profiles, and recommendations for scaling up. Results will then be presented to the Gulf SSC, Reef Fish Committee, and Council, with attention given to legislative, funding, or cooperative pathways for permanent adoption and possible multi-species expansion.

VII. Summary

The Anglers Almanac pilot directly addresses one of the Gulf's most persistent challenges: insufficient catch data for species like DWG. By pairing modern app-based reporting with targeted validation, the program delivers credible, state-calibrated catch estimates that traditional surveys alone can't provide. If successful, this approach could be advanced through an Exempted Fishing Permit (EFP) and scaled Gulf-wide, establishing a new standard for managing data-poor fisheries with greater precision, transparency, and collaboration.

The pilot is not intended to replace effort estimation programs like MRIP or LA Creel, but rather to align with and strengthen them by providing higher-resolution catch data that can be calibrated and applied independently for each Gulf state. In this way, the pilot builds directly on the proven foundation of Louisiana's LA Creel and ROLP while leveraging modern technology to close long-standing information gaps.

The true measure of success will be found not only in the improved precision of catch estimates, but also in the trust and confidence built among fishermen, managers, and decision-makers. By showing that modern technology and community participation can work together to deliver actionable data, this pilot establishes a pathway for broader application. If validated, the approach could be advanced through an Exempted Fishing Permit and scaled Gulf-wide, providing a transparent, collaborative model for managing data-poor fisheries with greater accuracy, accountability, and shared ownership.