



White **Whale**

Litepaper

Keep the Peg. Be the Whale.

Arbitrage Platform Built on Terra

Table of Contents

Market Problems	4
Problem 1	4
Problem 2	4
Introduction	5
Features and Benefits of White Whale	6
Architecture	7
The Arb Vaults	7
vAssets	8
Flashloans	8
Vault fees	9
UST Vault	9
LUNA Vault	10
Treasury	10 - 11
Capital Flows	12
The WHALE Token	13
Governance	14
Token Distribution	15
Team	16
Roadmap	17
References and Footnotes	18
Risks	19 - 20

Market Problems

Problem 1 Whales Get all the Opportunities

Stereotypical whales are the villains of the crypto world because they are reverse Robin Hoods, stealing from the small retail users to fill their already ample coffers. Whales are unprincipled and price agnostic. They will manipulate markets to shake you out, deploy bots to gobble up initial liquidity, and short projects to zero if it makes them another penny. Whales have access to the highest margin, lowest risk opportunities in the market. Access to early rounds, private sales, trading discounts, market making, and arbitrage are all examples of what whales get to do and regulars don't.

In contrast, regular defi users just want a level playing field where everyone has an equal opportunity to build wealth. Retail users care about their communities and want to contribute positively to a new decentralized financial world.

In the Terra ecosystem, arbitraging UST back to peg is uniquely appealing to loyal community members because not only does it generate delta neutral profit, it also serves the critical function of keeping the peg, making the Terra ecosystem more secure and robust. However, getting into arbitrage requires capital, technical knowledge, and bot infrastructure... in short, as of now, it's strictly a whale's game.

Problem 2 Keeping the UST Peg

If a stablecoin cannot hold its peg, the entire ecosystem that is built around it can fail. This is not hypothetical. Just in 2021, the crypto markets have seen:

Multiple severe (>10%) altcoin corrections where stablecoins exhibited unacceptable deviations from their pegs, including a 60% crash across the entire altcoin market in May resulting in all major stablecoins temporarily losing their peg.

Multiple algorithmic defi stablecoin projects failed in 2021 because their stablecoin lost peg and went into a bank run cycle, resulting in the project going to zero.

UST, being the most established algorithmic stablecoin as well as having inherent value as a yield bearing asset, is by far the best chance the crypto world has yet seen of having a truly decentralized stablecoin. However, it would be naïve to think that UST is completely immune from losing its peg. After all, this is crypto, anything can happen.

Introduction

We believe that White Whale is a mission-critical project. Our mission is clear: to decentralize the enforcement of the UST peg. Our vision is to create a platform that enables the enforcement of the UST peg in a decentralized manner by providing the technical tools which allow regular users to participate in complex trading strategies such as arbitrage. By opening up L1 seigniorage arbitrage to the Terra community and empowering them to earn delta-neutral profits while simultaneously contributing to keeping the peg, we will make the entire Terra ecosystem more secure, robust, and efficient.

We will also develop and implement several other arbitrage and automated trading strategies on our platform for regular users to utilize. In addition to L1 arbitrage for UST, other UST based arbitrage strategies will be added to the UST vault (e.g., price arbitrage between decentralized exchanges and loan liquidations). In addition to the UST vault, other single asset vaults will be added to the platform, such as the LUNA vault, other Terra stablecoins, other Terra native assets, mAssets, etc...

Ultimately, our goal is to stabilize the entire Terra ecosystem through community arbitrage, and then cross-chain arbitrage will be added to the platform to take advantage of the many arb opportunities that will open up through wormhole and the IBC and beyond. As far as future development options go for community-led arbitrage, we are looking into a blue ocean of opportunity.





Features and Benefits of White Whale

1 Sustainability

As soon as White Whale goes live, the platform will be profit generating, which allows the distribution of real, consistent, and sustainable rewards to all active contributors to the platform.

2 Simple User Experience

Users will only have to deposit UST into the ARB vault to participate and can withdraw UST whenever they choose. This procedure provides the simplest and cleanest possible user experience. The platform will handle all complex operations behind the scenes.

3 Delta Neutral Profits

Arbitrage generates profits in both rising and falling markets, so there is minimal market risk for the depositor. In a flat market, the depositor is earning Anchor yields on their funds. Thus, profits are generated in all markets.

4 No Impermanent Loss

No token swapping or user generation of LP tokens is required for our vaults. Usually, providing liquidity in a pool provides yield but may provide impermanent loss if one asset in the pool varies widely from the other. Our vaults generate yield with no risk of impermanent loss.

5 Economic Utility

The WHALE token will have one of the most unique and essential functions in all of defi, acting as an over-arching utility token providing Terra ecosystem stabilization features. Users may stake WHALE to the Treasury that will give them exposure to all of the arbitrage vaults and enable them to participate in ensuring ecosystem stability in the entire Terra ecosystem.

6 Demand Pool for UST

Users will likely be attracted to Anchor + arbitrage yields that our platform will produce, so we anticipate that White Whale will accumulate large deposits of UST, thereby increasing the macro UST demand. The Terra ecosystem thus benefits from White Whale.

7 Secure the Terra Ecosystem

The UST Arb vault will provide a barrier of protection for UST, hopefully contributing to UST becoming the most widely used stablecoin. Future arb vaults will have several other mechanisms that support and stabilize Terra's ecosystem, ultimately making it more efficient.

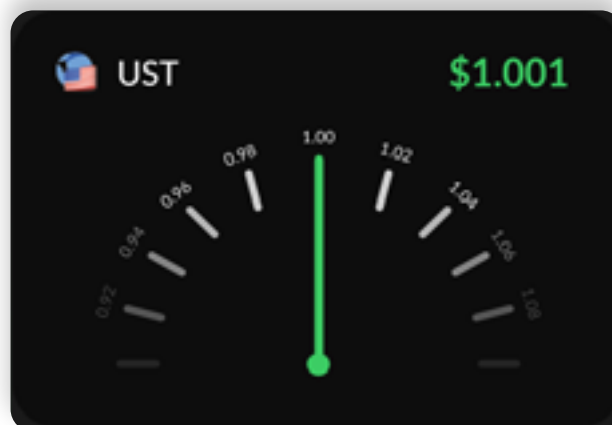
Architecture

The White Whale protocol consists of 2 main components: **The Arb Vaults and The Treasury.**

The Arb Vaults

The Arb Vaults are the initial main feature of the platform. They will be organized by single assets, each arb vault will deposit and hold one Terra asset. The arb vaults utilize a modular architecture in which the deposits serve as over-arching liquidity that can be deployed to multiple arbitrage strategies as opportunities are detected so long as those strategies are based on the same asset. That is, the UST Vault will use multiple UST based arbitrage strategies, LUNA Vault will use multiple LUNA based arbitrage strategies, and so on. As such, multiple arb bots and arb contracts will be running simultaneously within each vault and utilizing the deposits of the base asset as capital for arbitrage.

Some of the capital deposited into the vaults will also utilize various liquid passive income strategies (such as Anchor Protocol) as it is unlikely that all of the deposits in the vault will be regularly needed for arbitrage. Therefore, the yield of each vault will be the sum of the passive income strategies utilized by the vault and the profits generated through the various arbitrage strategies being run in the vault.



It is important to reiterate that the Vaults and Treasury simply comprises an autonomous smart contract deployed on the relevant blockchain network, operated directly by users calling functions on it (which allows them to interact with other users and/or pool their own selected assets in a peer-to-peer manner), and with no further control by or interaction with the original entity which had deployed the smart contract.

vAssets

When a user makes a deposit into one of the arbitrage vaults, they will receive a corresponding vAsset in their Terra wallet. vAssets are White Whale's auto-compounding liquid staking token, exactly like what aUST is for Anchor Protocol. When depositing UST into the UST Arb Vault, the depositor receives vUST in his wallet, when depositing LUNA into the LUNA Arb Vault, the depositor receives vLUNA, and so on.

What makes vAssets unique even among other derivatives is that by their nature they are designed to spike during times of high volatility i.e. market crashes, as that is when most arbitrage opportunities occur. DeFi and Terra have seen a proliferation of liquid staking tokens and their use cases over the past year, which vAssets will also be a part of. Over time, various utility will be made available for vAssets including: trading on secondary markets, LPing, integration into other protocols, but perhaps one of the most interesting use cases of vAssets is as collateral. Because vAssets are designed to spike during crashes, in theory they may prove to be very interesting forms of collateral to borrow against as they will be more resilient against liquidations during market crashes

Flashloans

When an arbitrage bot detects a trade opportunity, it calls on the vault contract for capital to execute the trade in the form of a flashloan. A flashloan is a loan that is both borrowed and repaid in the same transaction, in this case they are being used to execute arbitrage trades. Prior to releasing the flashloan, the vault contract calculates the value of the vault prior to the transaction and after the transaction, if the value after the transaction is not higher than the value prior, meaning the transaction and thus the arb trade is not profitable, the contract throws an error and the transaction fails.

Flashloans are a very powerful DeFi tool that are utilized on other chains such as Ethereum to perform other operations as well as arbitrage such as collateral swaps and self-liquidations. Our flashloan architecture will be the first implementation of flashloans at scale on Terra. We also plan on opening up these flashloan so that anyone can call them. When an outside contract calls a flashloan, a fee of 0.1% of the total loan amount is charged and goes to the profit of the vault, which is distributed to vault depositors.

Vault Fees

Apart from network fees, there is no fees for users to deposit into the arb vaults, however there is a 0.1% fee for every withdrawal from the arb vaults paid in the asset being withdrawn. A \$10,000 UST withdrawal would take a fee of \$10. The Withdrawal fees are sent to the Treasury where they are overseen by community governance.

On top of the withdrawal fee, 20% of the profits of each arbitrage trade made in each vault will be sent to the Treasury while 80% of the profits are added to the yield of the vault. The same split occurs for the revenue generated by flashloans. If a flashloan for \$100k is called, the vault earns \$100 profit, \$20 goes to the Treasury and \$80 goes to the yield of the vault.

The UST Vault

Our flagship vault will be the UST Arb Vault. Users will deposit UST only into the UST Arb Vault, which will firstly arb UST back to peg via the level 1 seigniorage method. New arbitrage and automated trading strategies based on UST will be added in the future to the UST arb vault. For example, another strategy currently being developed is arbing the UST-LUNA trading pair over multiple DEX's (i.e., Astroport/Terraswap/Loop).

When no arbitrage opportunities are available, the principal in the UST Arb vault is deposited into Anchor protocol to generate yield. When UST is off peg above a threshold level to account for transaction fees and slippage, the deposits are withdrawn from Anchor and used by the protocol to execute the arbitrage trade. The bots execute trades until the profitable arbitrage opportunity no longer exists; the capital is then deposited back into Anchor.

The total rewards accumulated by depositors of the UST Vault, which will be reflected in their UST balance in the vault, will be:

$$\mathbf{vUST = Anchor Yield + Arbitrage Profits}$$

The LUNA Vault

After the UST vault, the second vault that will be developed is the LUNA vault. The LUNA vault will employ the same modular architecture as the UST vault and execute multiple LUNA based arb strategies. The first of these strategies will be arbing the LUNA/BLUNA pair on Terraswap. Additional arbitrage strategies for the LUNA vault may include: (i) arbing LUNA across multiple DEX's and (ii) arbing LUNA against other new derivatives that are currently being developed on Terra, such as pLUNA, yLUNA, etc... Through governance proposals community members may introduce and white-list new automated trading strategies to the LUNA vault.

In addition to UST and LUNA, there are multiple other single asset vaults that the White Whale team can and will introduce onto the platform as development continues. The 19 other Terra stablecoins, other native Terra assets (i.e. ANC, MIR), mAssets are just a few possibilities. Cross chain opportunities follow soon after the Terra ecosystem. Ultimately, the community will decide which new asset vaults to add to the protocol and in which order through governance proposals.

The Treasury

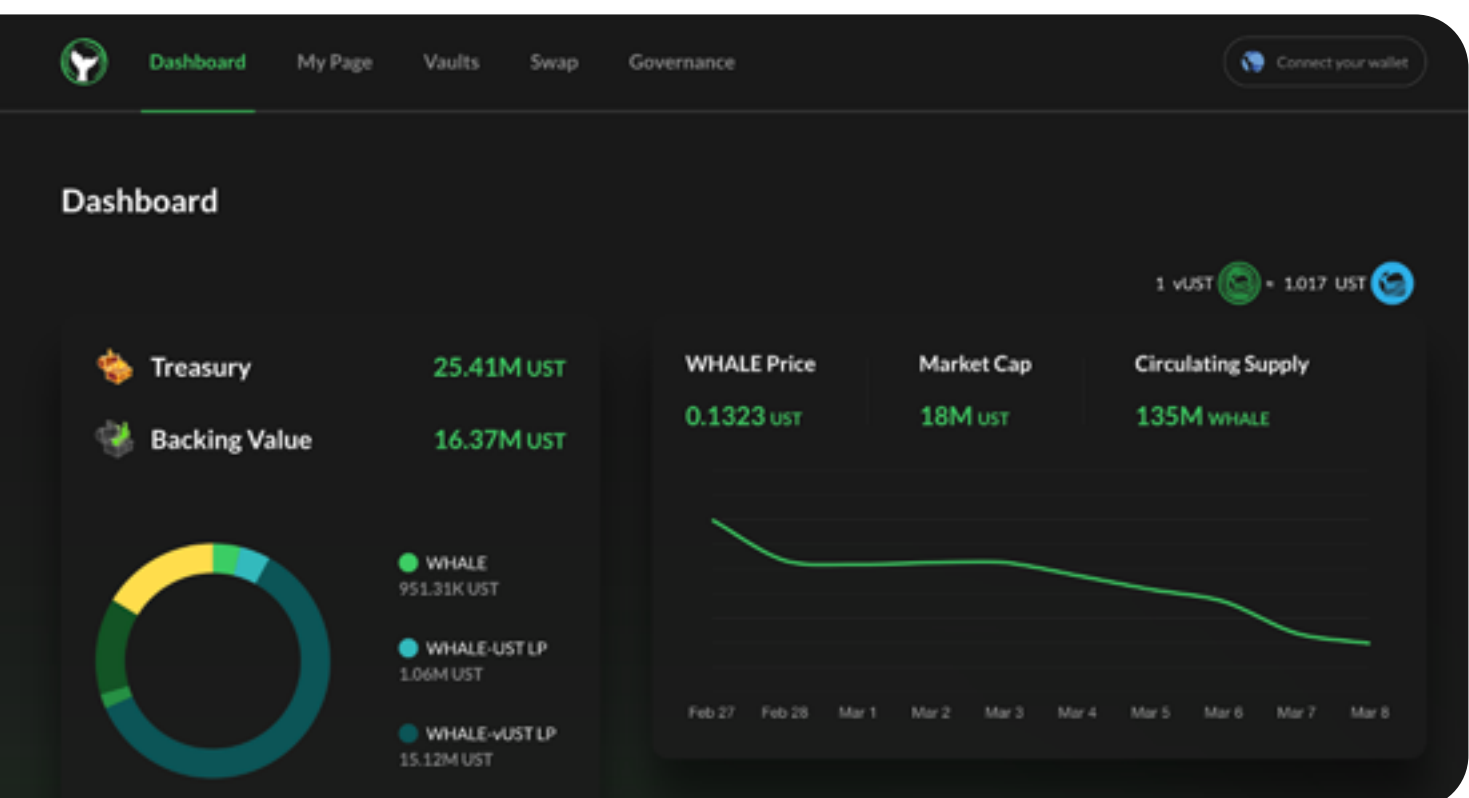
The next component of White Whale is the Treasury. The Treasury can be thought of as an ecosystem fund governed and controlled by the community that utilizes arbitrage and other automated trading strategies to stabilize the ecosystem. By its nature and design, the Treasury will hold multiple digital assets, both native Terra assets (i.e. UST, LUNA, MIR, etc...) and eventually beyond (i.e. BTC, ETC, USDT, etc...) to perform the stabilization functionalities. We believe that protocol treasuries are the next evolutionary step in DeFi and more and more protocols will adopt and develop similar models. It is DeFi 2.0.

The Treasury will accumulate assets several ways: (i) it will be bootstrapped with initial proceeds from the WHALE token Pre-Sale, (ii) 20% of the profits of every arb trade from every arbitrage vault get sent to the Treasury (iii) a 0.1% withdrawal fee from each single asset arb vault on the platform, and (iv) the Treasury will eventually leverage the Olympus DAO model of swapping bonds (discounted WHALE tokens with vesting) for select assets to bootstrap new single asset vaults as well as own its trading liquidity pool (protocols owning their liquidity pools is another new best practice in DeFi which White Whale plans on strategically adopting from its inception). Let's say White Whale is introducing a new single asset arbitrage vault after the UST vault called the LUNA vault. The Treasury could issue WHALE bonds at a discount if buyers will swap their LUNA for them, thus accumulating LUNA into the Treasury. The Treasury now owns this LUNA as a capital asset.

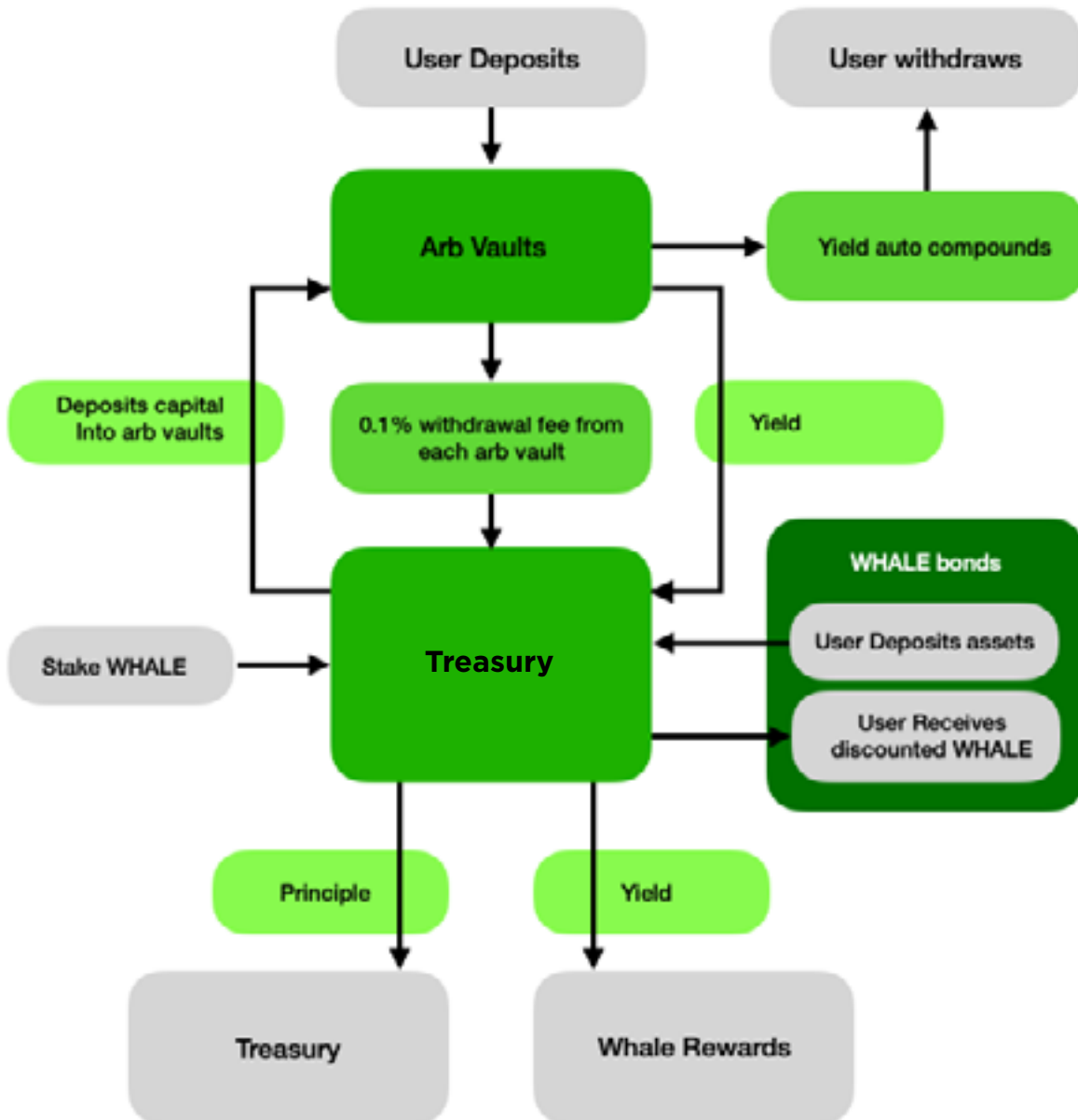
The LUNA will then be deposited by the Treasury into the new LUNA arb vault, bootstrapping its liquidity. The Treasury will do this for UST and then every new single asset vault introduced onto the platform. Ultimately, the Treasury will own a diverse basket of assets by providing initially liquidity to our own arb vaults. The Treasury then earns arb yield on its assets and helps secure the ecosystem. The yield from the Treasury will be applied as rewards to active community contributors (i.e. voters, stakers, etc...)

The number of WHALE tokens staked to the Treasury will determine the amount of voting power each user has.

Through governance proposals, the community will be able to add or remove trading strategies from the Treasury, adjust trading parameters, issue new WHALE bonds, and if they feel the Treasury is overfunded, they could draw down funds for ecosystem development purposes. We are also planning on bootstrapping initial WHALE stakers to the Treasury by boosting rewards for a time period with a dynamic emissions contract.



Capital Flows



The WHALE Token

The native digital cryptographically-secured fungible token of White Whale (WHALE) is a transferable representation of attributed governance and utility functions specified in the protocol/code of White Whale, which is designed to be used solely as an interoperable utility token on the platform.

The WHALE token also provides economic incentives that will be distributed to encourage users to contribute to and participate in the ecosystem of White Whale, thereby creating a mutually beneficial system where every participant is fairly compensated for their efforts. The WHALE token is an integral and indispensable part of White Whale platform, because without the WHALE token there would be no incentive for users to expend resources to participate in activities or provide services for the benefit of the entire ecosystem of White Whale. The tokenomics are designed such that incentive WHALE tokens will be awarded to active users based on their actual usage, activity and contribution on White Whale platform and/or proportionate to the frequency and volume of transactions.

We believe we have designed a native token that will have one of the most unique and impactful use cases in all of defi. The WHALE token will function as an over-arching utility token providing ecosystem stabilization features to the entire Terra Ecosystem and beyond. All WHALE tokens provided by users will be staked to the Treasury, which will deploy and deposit assets into all of the single asset arb vaults on the platform, as well as utilize its own yield bearing strategies, such as protocol owned liquidity. Therefore, the WHALE token is the only token that provides access to multiple arbitrage and other yield bearing opportunities across the ecosystem from one vault.



Governance

White Whale aims to be a pioneer in the rapidly evolving area of decentralized community led governance. The ethos of this protocol is to empower regular users and redistribute market influence from centralized entities to retail communities; this will be reflected at the heart of White Whale within its governance structure.

The governing body over the White Whale protocol will be known as “The Guardian Whales DAO.” After launch of V1, the White Whale team will focus on development of the DAO and begin the process of fully transitioning the protocol to community-led governance. We expect that fully decentralized governance structures take time to develop properly. Our goal is to fully transition the protocol over to community-led governance as quickly as possible yet still in a practical and systemic manner. The Guardian Whales DAO will have its own legal Charter, which will be crafted with the help of our legal counsel. Our goal is to build a legitimate, fully decentralized DAO that will completely manage the capital, operations, development, and direction of White Whale.

After V1 launch, a collection of NFT’s, known as “The Guardian Whales,” designed originally by our in-house artist will be airdropped to active and engaged participants of the WHALE ecosystem.

Staking WHALE tokens to the Treasury will enable users to create and vote on on-chain governance proposals to determine future features and/or parameters of White Whale, with voting weight calculated in proportion to the tokens staked. Some examples of the more common governance proposals that we expect will be submitted include: adjusting parameters and fees of the protocol, whitelisting new arbitrage strategies and/or vaults, community fund spends, and community fund distributions.

Here are some standards that the governance process will adhere to:

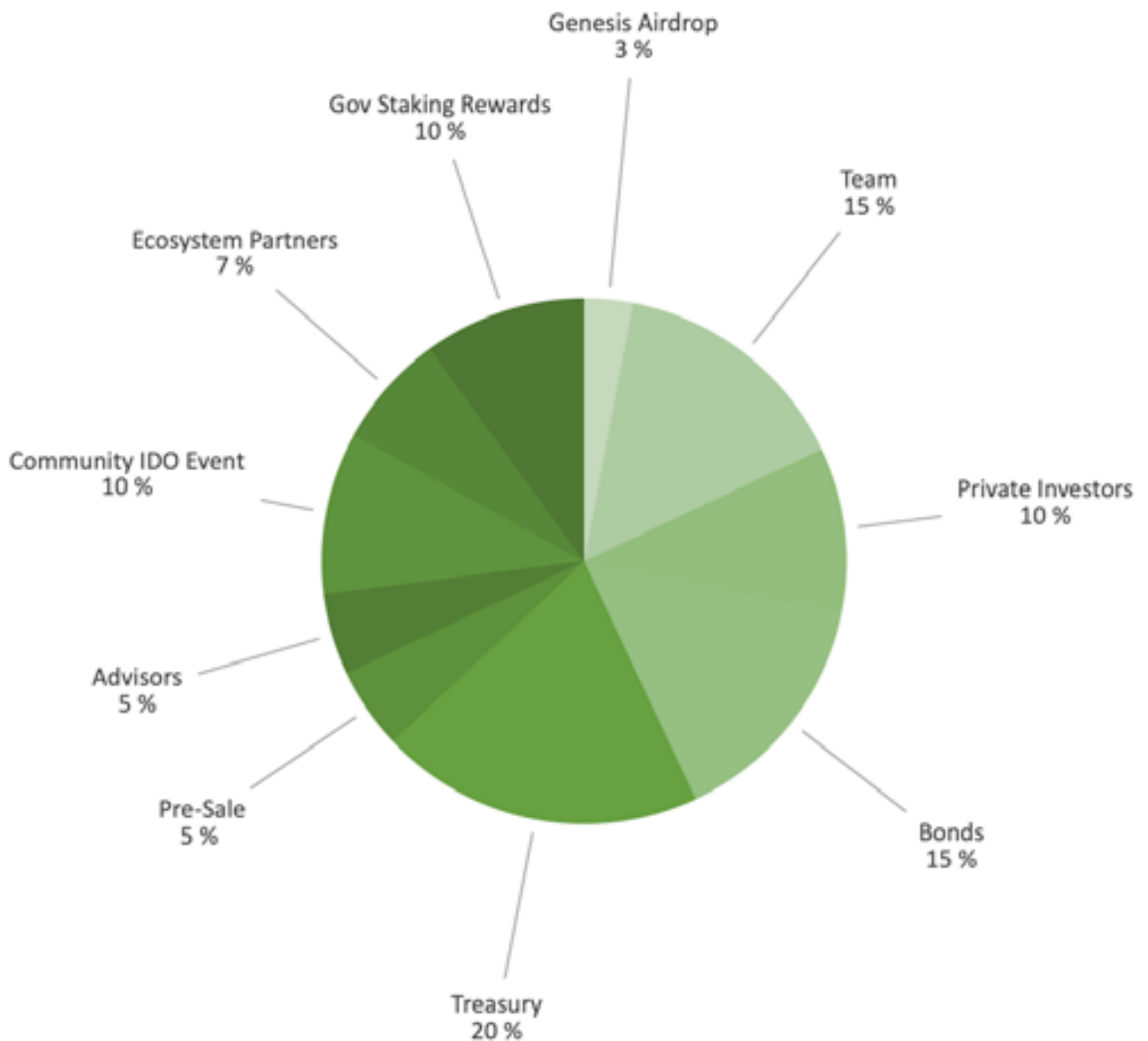
- 1** Community members will be encouraged to initiate community discussions on a forum page prior to submitting a governance proposal.
- 2** Governance proposals will require a deposit of WHALE tokens to submit; the deposit will be reimbursed upon execution of the proposal if the vote reaches a quorum. If a quorum is not reached, the deposit will be forfeited by the proposer and will be distributed to stakers as additional rewards
- 3** The White Whale platform will continue to partner with new projects being built on Terra to discover and implement the new best practices of community governance as we believe these systems are currently still being developed and experimented with.

Token Distribution

Total Max Supply

1 billion

Distribution



 **Team**



Howard
CTO



Sebastian
Founder



OxFable
COO



OxBoblowlaw
Research



KerberOx
Smart Contracts



Jujjayb
Designer



Roadmap

- **July 2021**
Litepaper
- **August 2021**
MVP - Next Top Blockchain Start-Up Hackathon
- **November - December 2021**
Test net, live arb testing
Audits
Community IDO Events
- **January - March 2022**
Mainnet Launch - Open UST vault
Open Flashloans as a service on Terra
- **April - June 2022**
Open Luna Vault
Introduce "The Hiding Game" Arb strategy
Guardian Whales NFT Airdrop
- **July - September 2022**
Bonds
V2 Governance Model (xWHALE, locked staking)
More Vaults
- **October - December 2022**
Forex Arbitrage
Crosschain arbitrage



References and Footnotes

1. WHALE token is a functional utility token which will be used as the medium of exchange between participants on White Whale in a decentralized manner. The goal of introducing WHALE token is to provide a convenient and secure mode of payment and settlement between participants who interact within the ecosystem on White Whale, and it is not, and not intended to be, a medium of exchange accepted by the public (or a section of the public) as payment for goods or services or for the discharge of a debt; nor is it designed or intended to be used by any person as payment for any goods or services whatsoever that are not exclusively provided by the issuer. WHALE token does not in any way represent any shareholding, participation, right, title, or interest in the Company, the Distributor, their respective affiliates, or any other company, enterprise or undertaking, nor will WHALE token entitle token holders to any promise of fees, dividends, revenue, profits or investment returns, and are not intended to constitute securities in Singapore or any relevant jurisdiction. WHALE token may only be utilized on White Whale, and ownership of WHALE token carries no rights, express or implied, other than the right to use WHALE token as a means to enable usage of and interaction within White Whale..

2. The right to vote is restricted solely to voting on features of White Whale; it does not entitle WHALE token holders to vote on the operation and management of the Company, its affiliates, or their assets or the disposition of such assets to token holders, or select the board of directors of these entities, or determine the development direction of these entities, does not constitute any equity interest in any of these entities or any collective investment scheme; the arrangement is not intended to be any form of joint venture or partnership).

Risks

White Whale is currently in the initial development stages and there are a variety of unforeseeable risks. You acknowledge and agree that there are numerous risks associated with acquiring WHALE token, holding WHALE token, and using WHALE token for participation in White Whale. In the worst scenario, this could lead to the loss of all or part of WHALE token held.

If you decide to acquire whale token or participate in white whale, you expressly acknowledge, accept and assume the following risks.

Uncertain Regulations and Enforcement Actions: The regulatory status of White Whale, WHALE token and distributed ledger technology is unclear or unsettled in many jurisdictions. The regulation of digital assets has become a primary target of regulation in all major countries in the world. It is impossible to predict how, when or whether regulatory agencies may apply existing regulations or create new regulations with respect to such technology and its applications, including WHALE token and/or White Whale. Regulatory actions could negatively impact WHALE token and/or White Whale in various ways. The Company, the Distributor (or their respective affiliates) may cease operations in a jurisdiction in the event that regulatory actions, or changes to law or regulation, make it illegal to operate in such jurisdiction, or commercially undesirable to obtain the necessary regulatory approval(s) to operate in such jurisdiction.

Inadequate disclosure of information: As at the date hereof, White Whale is still under development and its design concepts, consensus mechanisms, algorithms, codes, and other technical details and parameters may be constantly and frequently updated and changed. Although this whitepaper contains the most current information relating to White Whale, it is not absolutely complete and may still be adjusted and updated by the White Whale team from time to time. The White Whale team has neither the ability nor obligation to keep holders of WHALE token informed of every detail (including development progress and expected milestones) regarding the project to develop White Whale, hence insufficient information disclosure is inevitable and reasonable.

Failure to develop: There is the risk that the development of White Whale will not be executed or implemented as planned, for a variety of reasons, including without limitation the event of a decline in the prices of any digital asset, virtual currency or WHALE token, unforeseen technical difficulties, and shortage of development funds for activities.

Security weaknesses: Hackers or other malicious groups or organizations may attempt to interfere with WHALE token and/or White Whale in a variety of ways, including, but not limited to, malware attacks, denial of service attacks, consensus-based attacks, Sybil attacks, smurfing and spoofing. Furthermore, there is a risk that a third party or a member of the Company, the Distributor or their respective affiliates may intentionally or unintentionally introduce weaknesses into the core infrastructure of WHALE token and/or White Whale, which could negatively affect WHALE token and/or White Whale. Further, the future of cryptography and security innovations are highly unpredictable and advances in cryptography, or technical advances (including without limitation development of quantum computing), could present unknown risks to WHALE token and/or White Whale by rendering ineffective the cryptographic consensus mechanism that underpins that blockchain protocol.

Other risks: In addition, the potential risks briefly mentioned above are not exhaustive and there are other risks (as more particularly set out in the Terms and Conditions) associated with your participation in White Whale, as well as acquisition of, holding and use of WHALE token, including those that the Company or the Distributor cannot anticipate. Such risks may further materialize as unanticipated variations or combinations of the aforementioned risks. You should conduct full due diligence on the Company, the Distributor, their respective affiliates, and the White Whale team, as well as understand the overall framework, mission and vision for White Whale prior to participating in the same and/or acquiring WHALE token.



White **Whale**