

# Assessing Risk of Fuse Pool 27 (The Animal Kingdom)

## Useful Links

- [Rari Gov](#)
- [Rari Docs](#)
- [Rari Security](#)
- [Fuse Pool 27](#)
- [Pool Details and Metrics](#)
- [Fuse Pool Admin Guide](#)
- [Rari Safety Score Calculation](#)

## Context

As of April 22nd 2022, DOLA is not listed on Fuse Pool 27. DOLA is presently listed in the following pools (see table below):

Fuse Pool	Name	Supplied	Asset Liquidity	Borrowed
6	Tetranode's Pool	\$8M	\$5.43M	\$2.57M
22	Badger Pool	\$2M	\$1.66M	\$340.2K
24	Harvest FARMstead	\$500k	\$277.6k	\$222.4k
127	0xB1's Kitchen Sink	\$770k	\$197.3k	\$572.7k
	TOT	\$11.27M	\$7.56M	\$3.70M

GWG has a decision to make. Does it create new DOLA Fed and add \$DOLA liquidity to this pool?

As a reminder, admins control most all aspects of a Rari Fuse Pool. Some considerations,

- Admins keep all the Platform Fees generated
- If Admins deem the pool too risky, they could reduce the max LTV of DOLA (we have little to no say)
- Admins decide which assets to onboard, even if it a perceived threat/competition to us
- If not well maintained, pools run the risk of becoming insolvent. Insolvency can occur in a multitude of ways some of which are tied to mismanagement of onboarding assets, capital being pulled/overall lacking, loss of interest, to name a few.

## Rug & Exploit Risk

	Multi-Sig or 48 hour Time lock	Upgradeable Contracts	Price Oracle	Liquidation Incentive	Close Factor
The Animal Kingdom	Yes	Yes	MasterPriceOracleV3	10%	40%

## Rari Safety Score

	RSS (%)	Grade
The Animal Kingdom	44.70	D

## Pool 27 Details

	# Assets / Stables	Total USD Supplied	Total USD Borrowed	Utilization Rate	Liquidations
March 22nd	10 / 4	\$17.8M	\$3.11M	17.5%	123
April 22nd	12 / 4	\$10.5M	\$1.25M	11.9%	204

### Notes:

- In the last month, there's been a \$7.3M decrease in supplied assets (~ -40%), as well as 81 liquidations. Liquidations for The Animal Kingdom are very high, possibly due to the volatile nature of the assets in the pool. Cause for concern. Otherwise Supply, and Borrow figures look healthy.

### Top Supplied Assets

	Rank #1	Rank #2	Rank #3	Rank #4	Rank #5
March 22nd	BPT (\$7M)	SDT (\$5M)	FRAX (\$4M)	FEI (\$1M)	xSDT (\$828k)
April 22nd	FRAX (\$3.6M)	SDT (\$2M)	BPT (\$1.5M)	FEI (\$1.3M)	UST (\$1.2M)

## Notes:

- Large amounts of BPT have either been withdrawn or liquidated in the last month. StakeDAO-native assets used to make up 72% of total supplied assets, and now it's significantly less. These non-conventional assets would need to be explored further (more on this in later section).



## Top Utilized Assets

	Rank #1	Rank #2	Rank #3	Rank #4	Rank #5
<b>March 22nd</b>	ETH (83%)	FEI (64.9%)	FRAX (54.5%)	agEUR (25.3%)	sdeursCRV (14.9%)
<b>April 22nd</b>	ETH (36%)	FRAX (30%)	sdeursCRV (14%)	FEI (7%)	N/A

## Note:

- Flow from The Animal Kingdom appears to be that StakeDAO native assets are deposited and in return ETH and stables are borrowed. Could see a market fit for DOLA.



## Risks or other Concerns:

The risk team has identified concerns about several assets in the pool which may present outsized systemic risk to an eventual DOLA listing. These include risks tied to:

- Liquidity
- Ease of liquidation
- Oracle Risk
- Token price risk

## Non-Conventional Collateral

This table lists the collaterals from all three Fuse Pools that falls outside more conventional collateral like ETH or stablecoins:

Symbol	Market Cap	Collateral Factor	Total Supplied	Utilization Rate	Price Oracle	Safety Score
BPT	\$12,765,235	60%	\$1,480,967	Unborrowable	UNI TWAP	0.56
SDT	\$21,930,875	50%	\$2,098,183	Unborrowable	UNI TWAP	0.45
xSDT	\$4,114,380	60%	\$571,194	Unborrowable	StakedSDT Oracle	N/A

BPT - BlackPool is a project that manages digital assets in the metaverse and play-to-earn space. BPT token holders can vote in governance and also earn fees generated by the digital assets such as yield from games such as Axie Infinity, Sorare, and more that are managed by the BlackPool DAO.

SDT - The Stake DAO Token is a governance token which allows users to vote and earn fees generated on Stake DAO via products such as staking and automated investment strategies. Stake DAO is a new multi-service DeFi platform built by the community which leverages the entire DeFi ecosystem to give users access to the most effective investment strategies.

xSDT - represents SDT that is staked in the Stake DAO ecosystem.

## Assessment:

### Rari Capital

Rari Capital can be deemed a safe protocol for Inverse to work with/build on.

- RARI has been audited by three top tier Auditors: Quantstamp, Omniscia, and OpenZeppelin. These auditors have secured billions in funds and have a months-long backlog, meaning they are sought out in the industry. They each charge well over \$100,000 for their services.

- RARI has an active Bug Bounty Program with Immunify, an industry leader for Bug Bounties. They have posted a \$250,000 reward for critical severity issues, one of the highest rates you'll find in the market.

## Non-Conventional Assets

### Oracles:

The non-conventional assets use UNI TWAP. Time Weighted Average Price (TWAP) is a lagging indicator that becomes out of sync with the market-wide price during times of moderate to high volatility, leading to inaccurate data being consumed by smart contracts that put protocols at risk of under-collateralization. The naive way to use an AMM liquidity pool as a price oracle is by simply dividing the number of tokens currently residing within each side of the pool to get an exchange rate. While this does provide the current spot price of the liquidity pool, it's extremely vulnerable to manipulation. Smart contracts using AMM spot prices as oracles can be easily exploited through sandwich attacks — an attack vector where a malicious entity makes a large trade within an AMM liquidity pool to shift the price in their favor, then uses that distorted pricing to unfairly siphon value from smart contracts using that AMM liquidity pool as a spot price oracle. It is therefore highly recommended, even by Uniswap, to avoid using AMM spot prices as oracles because they can (and will) be manipulated, resulting in user losses. In the context of The Animal Kingdom, \$BPT and \$SDT are both using Uniswap TWAP and are therefore potentially exploitable.

On the topic of liquidity, \$BPT only has 1 LP (BPT-wETH on Sushiswap) with \$570k liquidity and low 5 figure daily trading volumes, making it a prime candidate for a price manipulation event.

\$SDT on the other hand is safer. It has CEX presence and 2 DEX LPs on Ethereum Mainnet. Recently, a proposal passed via governance to migrate liquidity from DEX e.g. SDT-ETH Sushiswap and Uniswap LP pair in favour of a SDT-ETH pool on Curve v2. A migration to Curve v2 LP aside from providing some benefits to Stake DAO and \$SDT (e.g. for lower slippage, a more competitive liquidity distribution, potential new income streams and optimization of weekly inflation's allocation), most importantly moves \$SDT trading away from Sushi TWAP and replaces with the more secure curve oracle (virtual price). The pool has a depth of over \$4M at the time of this writeup and we expect this figure to grow significantly, as the gauge will be bribed with protocol owned vecrv.

It's possible that the majority of the current \$SDT and \$BPT being supplied to the pool comes directly from the Stake DAO's reserves, so the Admin of the pool has an additional incentive for such a scenario not to occur. There are measures they can take on their end (and we can advise they take) to secure the pool. We should always recommend supply caps on lower liquidity TWAPs if not currently present. For assets with very low liquidity (less than \$1M), we recommend supply be capped at the depth of the underlying asset in the DEX with the most liquidity.

### Liquidity Stats:

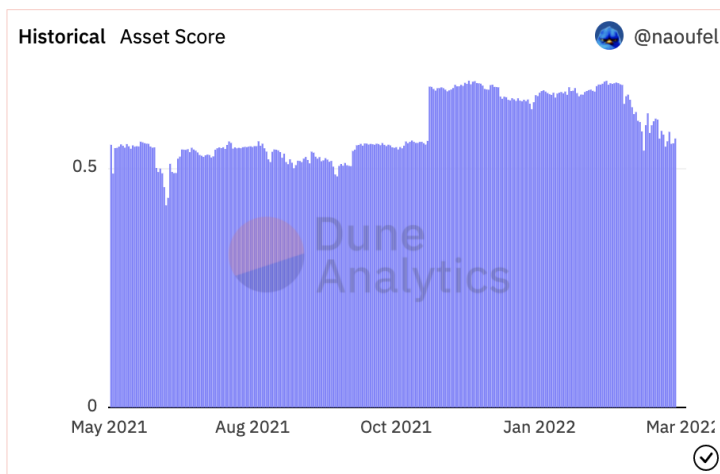
Unconventional Assets	# Markets on Ethereum	# CEX	Deepest Liquidity (\$)	Total Liquidity on Ethereum	Liquidity/Market Cap (%)
BPT	1	0	\$570k	\$570k	4.5%
SDT	3	2	\$4.11M	\$5.11M	17%

### Collateral Stats:

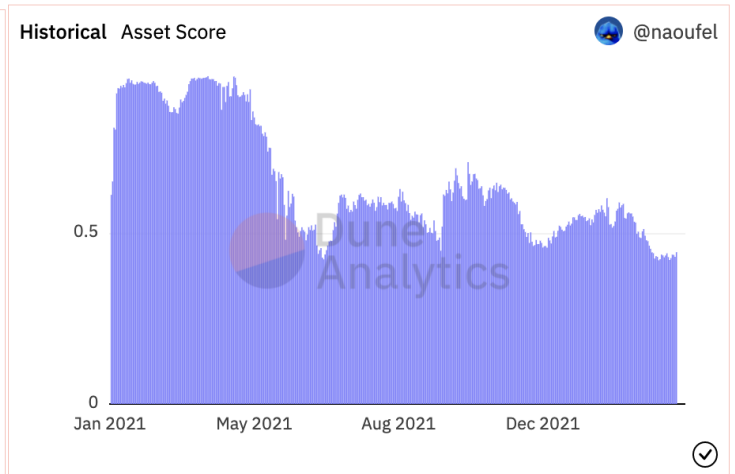
- BPT: CF is high (40% would be more appropriate). Asset is unborrowable and should remain as such. Safety Score is ok. Very shallow liquidity and only 1 DEX pair on Ethereum. Collateral could be made safe if supply capped, and have pool admin maintain current supply close to that cap. Otherwise price manipulation risk is present.
- SDT: CF is high (40% would be more appropriate). Asset is unborrowable and should remain as such. Safety Score is low, likely due to price volatility and low liquidity. More depth in DEX pools compared to BPT, + Curve Factory and also CEX presence reduces risk of price manipulation. TWAP oracle exploit is still present and thus recommendation should be similar to BPT (supply cap, 60min TWAP price oracle, lower CF).
- xSDT: CF is high (40% would be more appropriate). CF is higher for xSDT than for SDT (unusual). Asset is unborrowable and should remain as such. No trading pairs for xSDT, but the asset is not locked/is retrievable.

### Safety Scores:

Below are the Safety Scores, plotted against time, for the Non-conventional collaterals studied above:



**\$BPT Safety Score**



**\$SDT Safety Score**

In conclusion, we've addressed ease of liquidation, oracle risk, token price risk, and liquidity issues for the unconventional collateral assets in Fuse Pool 27 (The Animal Kingdom). The

RWG Team recommends that if GWG were to pursue this pool, that they should make explicit requests to secure the pool (as mentioned above) before committing. The RWG also recommends that a communication channel be established between them and the Stake DAO Team, so that we can request the implementation of these measures directly, as well as other gather additional information (more on the 40% decrease in supplied assets this past month).

Overall, this would require a similar monitoring environment setup from the RWG as what's already in place with Fuse Pool 127 (for \$FODL and \$xFODL), Fuse Pool 24 (with \$FARM and \$iFARM), and potentially with Fuse Pool 182 if proposal goes through (with \$BANK). While the setup is the same, it does raise the concern that too many high maintenance DOLA Feds is spreading the RWG resources thin.

Note: StakeDAO has just recently launched "liquid lockers" and ve-tokenomics for their \$SDT token. More Here: <https://twitter.com/StakeDAOHQ/status/1515998762992291847>