

# Wildcoin Whitepaper

# Introducing Wildcoin

Wildcoin is a project designed to become the world's largest animal preservation platform. We believe animal preservation is essential to the human experience and the key to maintaining a healthy ecosystem balance on Earth. Our vision is to enhance the human experience by preserving biodiversity, food security, economic sustainability, social impact, and climate regulation.

Wildcoin's technology stack comprises a mobile application, FastAPI Backend, PostegrSQL with pgvector, and AI-driven biometrics. It utilizes AI-driven biometrics and generates a unique Animal Decentralized ID (ADID) stored on the Solana Blockchain.

# Wildcoin is inspired by "Worldcoin."

"Worldcoin" is a project designed to become the world's largest privacy-preserving human identity and financial network, giving everyone ownership. It aims to provide universal access to the global economy regardless of your country or background, establishing a place for all of us to benefit in the age of AI. It is well known that this effort will have a tremendous global impact on humanity.<sup>1</sup>

Wildcoin differs from Worldcoin in focus. While both projects aim to enhance the human experience, Wildcoin is concerned with promoting biodiversity as a means of achieving broader impact.

<sup>&</sup>lt;sup>1</sup> <u>https://worldcoin.org/</u>



# Wildlife Ecosystem Challenges

# **Biodiversity and Ecosystem Services:**

**Pollination**: Approximately 75% of the world's flowering plants and about 35% of the world's food crops depend on animal pollinators to reproduce. These include more than 3,000 species of plants that humans use for food and many others for spices, beverages, and medicines. Without animal pollinators, many of these plants would fail to reproduce, leading to drastic reductions in crop yields and the foods available for human consumption.<sup>2 3</sup>

**Nutrient Cycling**: Animals are critical in cycling nutrients like carbon, nitrogen, and phosphorus. Earthworms, for instance, help enhance soil fertility by breaking down organic matter. Estimates suggest that worms can process around 10 tons of soil in one acre of land to enhance nutrient cycling.

## Food Security:

The Food and Agriculture Organization (FAO) of the United Nations estimates that fisheries and aquaculture assure the livelihoods of 10-12% of the world's population, and over 50% of the world's poor people rely directly or indirectly on agriculture, including animal husbandry, for their livelihoods.

Livestock alone provides food that contains essential nutrients not easily obtained from plant-based sources. For example, livestock accounts for about 15% of total food energy and 25% of dietary protein consumption globally.<sup>4</sup>

# **Economic Impact:**

The livestock sector contributes up to 40% of the global value of agricultural output and supports the livelihoods and food security of almost 1.3 billion people. In many developing countries, livestock can account for between 20 to 40% of agricultural GDP.<sup>5</sup>

<sup>&</sup>lt;sup>2</sup><u>https://www.fao.org/pollination/background/bees-and-other-pollinators/en/</u>

<sup>&</sup>lt;sup>3</sup> <u>https://www.ipbes.net/</u>

<sup>&</sup>lt;sup>4</sup> http://www.fao.org

<sup>&</sup>lt;sup>5</sup> <u>https://www.worldbank.org/en/topic/agriculture/overview</u>

# Cultural and Social Value:

Animals are deeply ingrained in many cultures as symbols of strength, fertility, and beauty. They also play key roles in religious ceremonies and community traditions worldwide.

Pets, particularly dogs and cats, serve as companions and family members, contributing to mental health and well-being. Studies have shown that interacting with animals can decrease levels of cortisol (a stress-related hormone) and lower blood pressure.<sup>6</sup>

## **Climate Regulation**:

"In the 2010 study, scientists found that before industrial whaling, populations of whales (excluding sperm whales) would have sunk between 190,000 to 1.9 million tonnes of carbon per year to the bottom of the ocean – that's the equivalent of taking between 40,000 and 410,000 cars off the road each year." - BBC.<sup>7</sup>

"Animals also play a crucial role in capturing and storing carbon from the atmosphere. Experts have found that strong, healthy populations of just nine different types of animals, including sea otters, grey wolves, and whales, could lead to the capture of 6.41 gigatons of CO2 every year. This represents 95% of the CO2 that needs to be removed from the atmosphere to ensure global warming remains below 1.5°C." - IFAW<sup>8</sup>

These roles underscore the interdependence of humans and animals. The absence of animals would not only lead to ecological collapse but also severe disruptions in food systems, economic instability, and loss of cultural heritage, making the survival of humans on Earth highly precarious.

Even though animals play a crucial role in our ecosystems, our involvement in their sustainability has been very limited. It is impossible to visualize our contributions to each particular animal. The Wildcoin Animal project will issue unique Animal Decentralized IDs on an individual animal basis, creating a new global financial network that allows these animals to receive the care they need.

<sup>&</sup>lt;sup>6</sup> <u>https://newsinhealth.nih.gov/2018/02/power-pets</u>

<sup>&</sup>lt;sup>7</sup> https://www.bbc.com/future/article/20210119-why-saving-whales-can-help-fight-climate-change

<sup>&</sup>lt;sup>8</sup> https://ipbes.net



Previously, implementing this would have required large-scale centralized technological development and a manpower-intensive approach. However, technological advances have enabled a decentralized system like blockchain and AI technology to recognize each individual and leverage a new token economy to approach a sustainable global ecosystem.

# Wildcoin Project

While we cannot address all the challenges noted above, we intend to bolster cultural and social value by alleviating technological challenges within our control and domain of expertise. By combining artificial intelligence (AI) with blockchain protocols, we aim to address key challenges for pet owners, veterinarians, and researchers.

## **Key Statistics**:

- The number of dogs globally is growing. In 2012, the total population of dogs in the world was estimated to be about 525 million; today, that number is estimated at 900 million, with nearly 471 million being kept as pets (52%)<sup>9</sup>
- There are approximately 89.7 million dogs in the United States, with 66% of U.S. households (86.9 million homes) owning a pet.<sup>10</sup>
- As of 2022, roughly 4.8 million pets are insured, meaning that roughly 5% of dogs are insured, leaving a 95% insurance coverage gap for the total dog population (assuming all pets insured are dogs).
- According to a Forbes Advisor survey on pet costs and inflation, nearly two-thirds (63%) of pet owners said they would have difficulty paying a surprise vet bill amid inflation. More than a quarter of pet owners (28%) said a vet bill of \$499 or less would cause them to go into debt, while a bill of \$999 or less would cause 42% to go into debt.<sup>11</sup>

<sup>&</sup>lt;sup>9</sup>https://worldanimalfoundation.org/dogs/how-many-dogs-are-in-the-world/#More-Than-471-Millio n-Dogs-Are-Kept-as-Pets-Worldwide

<sup>&</sup>lt;sup>10</sup> American Pet Products Association (2023-2024)

<sup>&</sup>lt;sup>11</sup> https://www.forbes.com/advisor/pet-insurance/pet-care/how-much-does-vet-visit-cost/



- Approximately 6.3 million companion animals enter U.S. animal shelters nationwide every year. Of those, approximately 3.1 million are dogs, and 3.2 million are cats.<sup>12</sup>
- Approximately 65% of dogs entering shelters are adopted, and 13% are euthanized. Similarly, approximately 66% of cats entering shelters are adopted, and 17% are euthanized.<sup>13</sup>

Pet abandonment is a serious problem affecting roughly 6.3 million companion animals annually. Multiple studies have been conducted, and the research shows that a primary factor in this decision is owners' inability to afford veterinary costs or to find affordable pet-friendly housing.<sup>14</sup>

Several factors contribute to pet abandonment, including high costs of veterinary treatment for serious issues, demographic disparities, lack of awareness of affordable alternatives, and educational gaps. Cost is the largest barrier to veterinary care. Unfortunately, most pet owners lack information about the long-term benefits of routine veterinarian visits and access to affordable veterinary care facilities.

Routine veterinary visits prevent, diagnose, and treat pet problems or diseases. Additionally, a significant correlation exists between demographic disparity and the availability of affordable care options. Typical barriers include cost of care, transportation, hours of operation, language differences, poor previous encounters with veterinarians, lack of trust in veterinarians, dog owners providing healthcare for their dogs themselves, and/or dog owners not believing veterinary care is necessary.

**Financial Barriers to Veterinary Care:** The high cost of veterinary services is a major obstacle for pet owners, leading to a lack of necessary medical care and, in some cases, pet abandonment.

Lack of Awareness of Low-cost Services: Pet owners are unaware of available low-cost veterinary services, contributing to underutilization and increased pet health risks.

<sup>&</sup>lt;sup>12</sup> https://www.aspca.org/helping-people-pets/shelter-intake-and-surrender/pet-statistics

<sup>&</sup>lt;sup>13</sup> https://www.aspca.org/helping-people-pets/shelter-intake-and-surrender

<sup>&</sup>lt;sup>14</sup> https://www.scirp.org/Journal/PaperInformation?PaperID=60176



**Demographic Disparities in Access to Care:** Variations in utilizing veterinary services across different demographics indicate inequalities in access to care, underscoring the need for targeted outreach.

**Perceptions and Behavioral Challenges:** Misconceptions about pet health needs and behavioral barriers, such as the perceived stress of veterinary visits on pets, deter owners from seeking care.

**Educational Gaps:** Many pet owners lack knowledge about the importance of routine veterinary care, highlighting the necessity for educational initiatives.

Based on our research to understand these factors, we believe that there is a significant opportunity to educate pet owners on the importance of preventative care, proper daily care, and veterinary services in addressing the issue of pet abandonment.<sup>15 16 17</sup>

## Technology

#### Summary of Animal BIometrics

Wildcoin is building an AI-driven eKYA solution that, like a human eKYC, uniquely identifies specific animals based on biometric signatures. The solution allows users to scan an animal or pet image using a smartphone or digital camera, upload, and submit the image via the system image upload interface.

Once the image is successfully uploaded to the system, a unique digital identifier (DID) is generated for that animal based on animal-specific biometric patterns and stored in the unique ID database for future reference. Suppose a user tries to upload a photo with the same animal biometric patterns. In that case, the system will automatically recognize those patterns and notify the user that the animal has been previously submitted and a DID already exists.

<sup>&</sup>lt;sup>15</sup> R. M. Park, M. E. Gruen, and K. Royal, "Association between Dog Owner Demographics and Decision to Seek Veterinary Care," Vet. Sci., vol. 8, no. 1, p. 7, Jan. 2021, doi: 10.3390/vetsci8010007.

<sup>&</sup>lt;sup>16</sup> M. Lem, "Barriers to accessible veterinary care," Can. Vet. J., vol. 60, no. 8, pp. 891–893, Aug. 2019.

<sup>&</sup>lt;sup>17</sup> C. Bir, M. Ortez, N. J. Olynk Widmar, C. A. Wolf, C. Hansen, and F. B. Ouedraogo, "Familiarity and Use of Veterinary Services by US Resident Dog and Cat Owners," Animals, vol. 10, no. 3, Art. no. 3, Mar. 2020, doi: 10.3390/ani10030483.





Animal DID Architecture

The Wildcoin solution will initially consist of a hybrid AI system that combines facial recognition, pattern recognition, reconstruction, and posture analysis. The key components of such a system include convolutional neural networks for facial recognition, scale-invariant feature transform (SIFT) for pattern recognition, and pose estimation models for analyzing body structure.



Animal AI Architecture

**Convolutional neural networks** use three-dimensional data for image classification and object recognition tasks.

**SIFT** is a computer vision technique used for feature detection and description. It detects distinctive key points or features in an image that are robust to scale, rotation, and affine transformation changes. SIFT (scale-invariant feature transform) identifies key points based on their local intensity extrema and computing descriptors that capture the local image information around those key points. These descriptors can then be used for tasks like image matching, object recognition, and image retrieval.

**Pose estimation** predicts different poses based on a person's body parts and joint positioning in an image or video. In the case of Wildcoin, pose estimation is used to predict poses based on an animal's body parts and joint positioning.

#### Animal Decentralized IDs (ADID)

Wildcoin introduces Animal Decentralized IDs (ADID), which uses blockchain technology to create unique, immutable IDs for animals. Our aim is to begin deploying the technology for pet owners and veterinary professionals to improve the ability to track and manage registration, vaccination, preventative care, and health records.

Our long-term vision is to extend the technology to support research and management of endangered species. Specifically, this technology could help researchers track animal populations, migration patterns, and health, thus improving scientific research and conservation efforts.

At a high level, ADID employs artificial intelligence (AI) to detect distinct features unique to each individual animal. ADIDs leverage AI-based nose print recognition—a mammalian trait—and unique photographic analysis techniques to distinguish individual differences among various animals.

This technology is integrated into the WILD App, enabling users to implement it using just their smartphone's camera function. To safeguard against manipulation, we integrate AI-driven verification processes within our architectural building blocks, which gather consensus from verifiers, thereby establishing an immutable system designed to thwart malevolent actors.



This methodology is termed "PoA = Proof of Animal."

We are deploying our solution on the Solana Blockchain (SOL) as our primary Layer 1 (L1) blockchain. Our system architecture incorporates a block producer and watcher (Verifier) model. Verifiers are required to maintain a security deposit in \$WILD tokens to participate in the Merkle tree proof validations, ensuring integrity and accountability within the network.

Based on network demand and resource utilization, we have considered developing our own Layer 2 (L2) scalability network on top of the Solana L1 infrastructure. This would improve throughput and reduce gas fees for transactions occurring within our application. Under this scenario, our team has previous experience developing Layer 2 (L2) scalability infrastructure. Specifically, key members were responsible for developing the Plasma network on ethereum. Subsequently, we are considering architectures analogous to Plasma, as detailed in the Plasma whitepaper.<sup>18</sup>



Wild System Architecture

<sup>&</sup>lt;sup>18</sup> https://plasma.io/plasma.pdf



ONS (Owner Name Service):

The Owner Name Service (ONS) is a naming service for owners registering their animals or pets. All Animal Decentralized IDs (ADIDs) are associated with this ONS. Additionally, ADIDs can be transferred between owners, supporting the unique process of transferring animal ownership. For example, an ONS could be @"Bob."



ONS Service

However, transfers require verification through a Web3-specific confirmation process. This process counteracts fraudulent actions and hacking and enhances the security of ownership transfers.

#### Wild App Interface

WILD App is the sole method for receiving \$WILD and is directly linked to the Animal Decentralized ID (ADID). The WILD App serves as an interface for utilizing \$WILD tokens, facilitating several key functions:

- 1. **Register Animals and Issue ADIDs**: Users register Animals in the WILD system. The system generates each registered animal's Animal Decentralized ID (ADID).
- 2. **Allocate and Notify \$WILD**: For each ADID issued, \$WILD tokens are allocated, and users are notified of the transaction.
- 3. **Task Assignment and Completion Reward** Users are assigned various tasks within the WILD Appsks. Completing these tasks allows users to receive \$WILD tokens.



- 4. **Participate in DAO Decisions**: Users can participate in DAO decisions centered around \$WILD tokens through the WILD App.
- 5. **Receive Rewards**: For each action completed within the app, \$WILD tokens users collect \$Wild tokens as rewards. The WILD App's interface offers these major functions, enhancing user interaction and engagement with the project's ecosystem.
- 6. **WILD App WILD crowdfunding for animals:** refers to using cryptocurrency to raise animal protection and welfare funds. Leveraging blockchain technology enhances transparency and reliability. Benefits of using cryptocurrency include ease of cross-border donations and low transaction fees.

Users and researchers can use the WILD App to crowdfund animal projects. To initiate crowdfunding in the WILD App, users must meet in-app social credit rating requirements based on previous activity (e.g., how long they used the animal, whether the animal is registered, whether the owner is taking care of it based on the record, etc.).



Wild APP Interface



## **\$WILD Token Economics**

\$WILD is a utility and governance token issued by Felix Canis INC., a Panama Corporation. Each ADID is awarded a certain number of \$WILD tokens upon registration. Users are assigned specific tasks to continue receiving \$WILD, and upon completing these tasks, they will receive additional \$WILD tokens. Owners can receive the \$WILD token rewards through their wallet by completing specific tasks.



\$Wild Token Architecture

## Typical \$WILD Earning Example

Bob registers his dog (Sparky) using the Wild App. The app recognizes the type of animal and records this along with the ADID, and Bob Earns \$Wild for registration. Bob inputs additional information, including the Sparky's name, breed, DOB (or age), sex, and other information. Bob earns \$WILD for entering this information.

Bob shares Sparky's ADID with his veterinarian, and the ADID is accessible within the veterinarian's ADID-enable animal resource management (ARM) system (To be developed by a subsidiary of INU Foundation). His veterinarian enters all pertinent historical medical record data associated with Sparky, including checkup history, vaccination records, medications, feeding recommendations, and dog-specific care.

Wild App reviews this information and creates a daily care checklist for Sparky. The checklist sends Bob notifications to remind him when to feed Sparky, give him his medication, and take him for preventative care treatments. Each time Bob completes a task, he takes a photo using the app, which is timestamped and uploaded to the system. Bob earns WILD Rewards for these activities, and these rewards are auto-converted and settled in \$WILD tokens at the end of each day.



#### Pet Care Staking Opportunities

Bob has to go out of town on a business trip and doesn't have a reliable caregiver for Sparky during that time. Alice lives nearby and has an excellent social credit rating on the Wild App. Bob messages Alice to ask whether she can care for Sparky for the duration of this business trip. Bob shares Sparky's ADID information, and she reviews her daily care checklist to determine her obligations. Alice agrees to watch Sparky in exchange for n\$WILD tokens per day, which are staked on the smart contract for settlement upon Sparky's return. Bob and Alice agree to the terms, and Sparky's ADID, medical records, and veterinarian care information are temporarily transferred to Alice. Alice gives Sparky food, water, and medication as needed and earns the wild rewards and subsequent tokens Bob would have received for Sparky's daily care.

**Scenario 1 Happy Path:** When Bob returns, he and Alice initiate the protocol's smart contract completion sequence by completing the in-app procedure. Control of Sparky's is returned to Bob's wallet, and the \$WILD tokens that have been staked are transferred to Alice's digital wallet. Alice also receives a social credit-score approval rating for Sparky's care, calculated by a weighted average of Bob's satisfaction rating and the checklist activity completion rate for Sparky's daily care routine.

**Scenario 2 Punishment Path:** When Bob returns, Sparky seems sick, and it's apparent Alice hasn't given him his medication. Bob registers a complaint within the system, and the smart contract's AI-driven Oracle logs the issue and recommends how many \$WILD Tokens Alice should forfeit. Alice's social credit rating is affected by this decision, and she must complete animal care training before she can resume caring for pets. If Sparky's issue is severe enough, Alice may be de-platformed completely, or the authorities may be called to conduct an investigation of animal abuse.

#### Community Supported Projects

Wild is partially governed by a Decentralized Autonomous Organization (DAO). Specifically, community projects are reviewed for \$WILD token holders to make decisions related to community support efforts.

Suppose the community votes to support a project. In that case, 10% of the pool of \$WILD Tokens are distributed within the ecosystem: 5% are returned to \$WILD



Token holders who participate in voting, and the remaining 5% is allocated to the development of the WILDCOIN ecosystem.



Simplified Wild DAO Community Governance

Example Community supported project:

Bob takes his Sparky to Carol, the veterinarian. Sparky swallowed an object that required surgery. Carol says the procedure will cost \$2,000 USD. Bob doesn't have the money to pay for the surgery, and without it, Sparky will have to be euthanized. Bob has never missed a preventative care appointment, feeds Sparky regularly, and gives him plenty of clean drinking water. Carol writes her recommendation within the ARM system (mentioned above). This recommendation is tied to Sparky's ADID, and Bob submits his community support request through the WILD application. The project is voted on and funded by users with \$WILD, and the token is deposited into Bob's wallet to pay Carol for the procedure, medication, and follow-up appointments.

Bob makes regular payments, including the agreed-upon interest rate, to repay the outstanding balance. By paying his outstanding loan balance on time, Bob builds his Wild Social Credit Score and can submit future loan applications through the application.



#### Tokennomics

The \$WILD token is a utility token with governance features. Using \$WILD, you can participate in voting for decision-making within the Wildcoin ecosystem and purchase items related to animal conservation. Additionally, the token plays a very important role in maintaining the consensus mechanism on the Blockchain.

The following is information on the tokenomics of the token.

| Launch date         | June 2024                           |
|---------------------|-------------------------------------|
| Network             | Solana                              |
| Contract Address    | ТВА                                 |
| Total supply        | 100,000,000,000 *Handled Billion    |
| Initial supply: 50% | 50,000,000,000 *Fifty Billion       |
| Price per token     | \$0.00054                           |
| Market Cap          | \$54,4000,000 *50% of total supply  |
| FDV                 | \$108,800,000 *100% of total supply |

*Table 1: \$WILD Tokenomics* 



#### 1. Wildcoin community and liquidity: 50%

This pool is designated for the community using the WILD App to register and manage ADIDs. The Liquidity Pool serves as a mechanism to provide a stable supply of \$WILD to the community and partners.

#### 2. Wildcoin Partner Airdrop: 5%

This pool is for airdrops to partners expected to be key supporters of Wildcoin.

#### 3. Investors: 25%

This pool is reserved for the initial investors in the Wildcoin project.

#### 4. Ecosystem contributors: 20%

The Wildcoin project requires contributions from many parties, including the core team, external service providers, developers, marketing, and other essential activities.





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