WombatStaking:

Changes in WombatStaking to audit: the following functions:

a. ***_calculateAndSendReward()*** - this method is only for calculating and sending rewards after deducting the Bribe caller fee.Earlier _toMasterWomAndSendReward() was used to send rewards which, in addition to sending rewards also used to deposit LP or withdraw LP from masterWombatV3.
b. ***_rewardBeforeBalances()*** - this method returns the rewardTokens (wom token plus the bonus reward Tokens) and the contract's balance of these tokens. Earlier this function would only return the contract's balance for the bonus Tokens added into the assetToBonusRewards. Now assetToBonusRewards is not used as we get the reward tokens from masterWombat's pendingTokens function.
c. ***deposit()***, ***withdraw()***, ***depositLP()*** - since _calculateAndSendReward only calculates & sends rewards, the depositing or withdrawing LP is done by these functions themselves now, which was done before by _toMasterWomAndSendReward().
d. ***withdrawLP()*** - This function is added to withdraw wombat LP from wombatStaking and send to the user.

Sum of LOC for all these methods: 145

WombatPoolHelperV3:

WombatPoolHelperV3 is just WombatPoolHelperV2 with the new function of withdrawLP added along with the option to claim rewards with withdraw or withdrawLP,
The functions to audit are:

a. ***withdraw()*** -
b. ***withdrawLP()*** -
c. ***withdrawAndClaim()*** -
d. ***_withdraw()*** -
e. ***_claimRewards()***

Sum of LOC for these methods: 46

MasterMagpieV2:

MasterMagpieV2 is the MasterMagpie for ETH launch of magpie, major difference between MasterMagpie & MasterMagpieV2 is that the staking token in masterMagpieV2 is not the receipt token anymore, staking token is wombat's LP token in masterMagpieV2. Logic for transfer of staking Tokens to or from MasterMagpieV2 (except for mWom Pool), burning & minting staking tokens removed so now, staking position is all recorded in MasterMagpieV2. For mWom Pool, we add this pool using masterMagpie's add() method and only this pool has transferStakingToken as true, for this pool, the stakingToken(i.e mWom token) are transferred to masterMagpieV2 upon staking and transferred from masterMagpieV2 upon withdraw.

LOC:597

WombatStakingV2:

WombatStakingV2 is the WombatStaking for ETH launch of magpie, it has all the changes that are in the WombatStaking along with the removal of receipt token minting/burning and

transfer functionality. In place of receipt token, now we use the wombat's LP token address. The functions different from wombatStaking are:

a. ***burnReceiptToken()*** - since receipt token is no longer minted, this function is removed.
b. ***deposit()*** and ***depositLP() -*** minting of receipt tokens is removed from these functions.
c. ***registerPool()*** - this function was used to register Wombat Pools on magpie, transferStakingToken is always passed false for each wombat pool so that the deposit() method of masterMagpieV2 cannot be called for any pool except only one mWom pool added via masterMagpie directly which involves mWom token transfer to and from masterMagpieV2.
d. ***config()*** - replaced setMWom(), setMasterMagpie(), setMasterWombat(), setBribeManager() with config().

Other methods are similar to the wombatStaking.sol

Sum of LOC for all these methods: 127

WombatPoolHelperV4:

WombatPoolHelperV4 is the wombatPoolHelper contract for ETH launch of magpie, so the receipt token (named as staking Token in this contract) related logic is removed and similar to WombatPoolHelperV4, it has withdrawLP and claim upon withdraw/withdrawLP functionality. The functions different from WombatPoolHelperV3 that are to audit:

a. depositLP()
b. withdrawLP()
c. _withdraw()
d. _claimRewards()
e. _deposit()

Sum of LOC for all these methods: 52

BaseRewardPoolV4:

BaseRewardPoolV4 is the rewarder contract for magpie's ETH launch. Since the receipt tokens are now not created, the totalStaked method must use calLpSupply() method from master magpie to get totalStaked. Changes in BaseRewardPoolV4 to audit, rewardToken field from 'struct Reward' was not used anywhere so it is removed:

a. totalStaked() - Since the receiptToken is no longer used in MasterMagpieV2, we use the calLpSupply() method of masterMagpie to get total staked.

Sum of LOC for this method: 3

Important Contracts to Audit

1. ./contracts/wombat/WombatStaking.sol - 145
2. ./contracts/wombat/WombatStakingV2.sol - 127
3. ./contracts/wombat/WombatPoolHelperV3.sol - 46
4. ./contracts/wombat/WombatPoolHelperV4.sol - 52
5. ./contracts/rewards/MasterMagpieV2.sol - 597
6. ./contracts/rewards/BaseRewardPoolV4.sol - 3

Total LOC: 970

Contracts out of Scope

A. Library Contracts
   1. ./contracts/libraries/MagpieBribeFactoryLib.sol
   2. ./contracts/libraries/MagpieFactoryLib.sol
   3. ./contracts/libraries/MagpieFactoryLibV2.sol
   4. ./contracts/libraries/PoolHelperFactoryLib.sol
   5. ./contracts/libraries/PoolHelperFactoryLibV2.sol

B. Mock Contracts
   1. ./contracts/mocks/wombat/MasterWombatMock.sol
   2. ./contracts/mocks/wombat/VeWomMock.sol

C. Interfaces
   1. ./contracts/interfaces/IMasterMagpieV2.sol
   2. ./contracts/interfaces/IPoolHelper.sol
   3. ./contracts/interfaces/wombat/IVeWom.sol
   4. ./contracts/interfaces/wombat/IWhitwlist.sol
   5. ./contracts/interfaces/wombat/IWombatStaking.sol
   6. ./contracts/interfaces/wombat/IWombatStakingV2.sol

Important Notes:

1. Some Contracts are just used for local testing purposes(Mock contracts and library contracts), so they are clearly out of scope.
2. The contracts/reward/MasterMagpie.sol is also out of scope because the only change in it was combining two modifiers into one.