Eaton Vance Enhanced Equity Income Fund Form N-CSRS May 25, 2018

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form N-CSR

CERTIFIED SHAREHOLDER REPORT OF REGISTERED

MANAGEMENT INVESTMENT COMPANIES

Investment Company Act File Number: 811-21614

Eaton Vance Enhanced Equity Income Fund

(Exact Name of Registrant as Specified in Charter)

Two International Place, Boston, Massachusetts 02110

(Address of Principal Executive Offices)

Maureen A. Gemma

Two International Place, Boston, Massachusetts 02110

(Name and Address of Agent for Services)

(617) 482-8260

(Registrant s Telephone Number)

September 30

Date of Fiscal Year End

March 31, 2018

Date of Reporting Period

Item 1. Reports to Stockholders

Enhanced Equity Income Fund (EOI)

Semiannual Report

March 31, 2018

Commodity Futures Trading Commission Registration. Effective December 31, 2012, the Commodity Futures Trading Commission (CFTC) adopted certain regulatory changes that subject registered investment companies and advisers to regulation by the CFTC if a fund invests more than a prescribed level of its assets in certain CFTC-regulated instruments (including futures, certain options and swap agreements) or markets itself as providing investment exposure to such instruments. The Fund has claimed an exclusion from the definition of the term commodity pool operator under the Commodity Exchange Act. Accordingly, neither the Fund nor the adviser with respect to the operation of the Fund is subject to CFTC regulation. Because of its management of other strategies, the Fund s adviser is registered with the CFTC as a commodity pool operator and a commodity trading advisor.

Managed Distribution Plan. Pursuant to an exemptive order issued by the Securities and Exchange Commission (Order), the Fund is authorized to distribute long-term capital gains to shareholders more frequently than once per year. Pursuant to the Order, the Fund s Board of Trustees approved a Managed Distribution Plan (MDP) pursuant to which the Fund makes monthly cash distributions to common shareholders, stated in terms of a fixed amount per common share.

The Fund currently distributes monthly cash distributions equal to \$0.0864 per share in accordance with the MDP. You should not draw any conclusions about the Fund s investment performance from the amount of these distributions or from the terms of the MDP. The MDP will be subject to regular periodic review by the Fund s Board of Trustees and the Board may amend or terminate the MDP at any time without prior notice to Fund shareholders. However, at this time there are no reasonably foreseeable circumstances that might cause the termination of the MDP.

The Fund may distribute more than its net investment income and net realized capital gains and, therefore, a distribution may include a return of capital. A return of capital distribution does not necessarily reflect the Fund s investment performance and should not be confused with yield or income. With each distribution, the Fund will issue a notice to shareholders and a press release containing information about the amount and sources of the distribution and other related information. The amounts and sources of distributions contained in the notice and press release are only estimates and are not provided for tax purposes. The amounts and sources of the Fund s distributions for tax purposes will be reported to shareholders on Form 1099-DIV for each calendar year.

Fund shares are not insured by the FDIC and are not deposits or other obligations of, or guaranteed by, any depository institution. Shares are subject to investment risks, including possible loss of principal invested.

Semiannual Report March 31, 2018

Eaton Vance

Enhanced Equity Income Fund

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Enhanced Equity Income Fund

March 31, 2018

Performance¹

Portfolio Manager Michael A. Allison, CFA

| % Average Annual Total Returns | Inception Date | Six Months | One Year | Five Years | Ten Years |
|--------------------------------|----------------|------------|----------|------------|-----------|
| Fund at NAV | 10/29/2004 | 5.98% | 12.85% | 10.80% | 7.23% |
| Fund at Market Price | | 3.24 | 14.64 | 12.11 | 7.50 |
| S&P 500 Index | | 5.84% | 13.99% | 13.30% | 9.49% |
| Cboe S&P 500 BuyWrite Index | | 1.19 | 6.95 | 7.42 | 5.09 |

% Premium/Discount to NAV²

5.61%

Distributions³

| Total Distributions per share for the period | \$ 0.518 |
|--|----------|
| Distribution Rate at NAV | 7.01% |
| Distribution Rate at Market Price | 7.43% |

Fund Profile

Sector Allocation (% of total investments)⁴

Top 10 Holdings (% of total investments)⁴

| Microsoft Corp. | 5.1% |
|-------------------------|------|
| Apple, Inc. | 4.4 |
| Alphabet, Inc., Class C | 3.9 |
| JPMorgan Chase & Co. | 3.8 |

| Visa, Inc., Class A | 3.5 |
|------------------------|-------|
| Amazon.com, Inc. | 3.4 |
| Johnson & Johnson | 3.4 |
| Home Depot, Inc. (The) | 3.1 |
| Bank of America Corp. | 3.1 |
| Fortive Corp. | 2.7 |
| Total | 36.4% |

See Endnotes and Additional Disclosures in this report.

Past performance is no guarantee of future results. Returns are historical and are calculated by determining the percentage change in net asset value (NAV) or market price (as applicable) with all distributions reinvested and include management fees and other expenses. Fund performance at market price will differ from its results at NAV due to factors such as changing perceptions about the Fund, market conditions, fluctuations in supply and demand for Fund shares, or changes in Fund distributions. Investment return and principal value will fluctuate so that shares, when sold, may be worth more or less than their original cost. Performance less than or equal to one year is cumulative. Performance is for the stated time period only; due to market volatility, current Fund performance may be lower or higher than the quoted return. For performance as of the most recent month-end, please refer to eatonvance.com.

Enhanced Equity Income Fund

March 31, 2018

Fund Snapshot

Objective The primary investment objective is to provide current income, with a secondary objective of capital appreciation.

StrategyThe Fund invests in a portfolio of primarily large- and mid-cap securities that the investment adviser believes have above-average growth and financial strength and writes call options on individual securities to generate current earnings from the option premium.

Options Strategy Write Single Stock Covered Calls

Equity Benchmark S&P 500 Index
Morningstar Category Option Writing

Distribution Frequency Monthly

Common Stock Portfolio

 Positions Held
 52

 % US / Non-US
 98.7/1.3

Average Market Cap \$225.9 Billion

Call Options Written

% of Stock Portfolio 48%
Average Days to Expiration 27 days

% Out of the Money 8.2%

The following terms as used in the Fund snapshot:

Average Market Cap: An indicator of the size of the companies in which the Fund invests and is the sum of each security s weight in the portfolio multiplied by its market cap. Market cap is determined by multiplying the price of a share of a company s common stock by the number of shares outstanding.

Call Option: For a call option on a security, the option buyer has the right to purchase, and the option seller (or writer) has the obligation to sell, a specified security at a specified price (exercise price or strike price) on or before a specified date (option expiration date). The buyer of a call option makes a cash payment (premium) to the seller (writer) of the option upon entering into the option contract.

Covered Call Strategy: A strategy of owning a portfolio of common stocks and writing call options on all or a portion of such stocks to generate current earnings from option premium.

Out of the Money: For a call option on a common stock, the extent to which the exercise price of the option exceeds the current price of the stock.

See Endnotes and Additional Disclosures in this report.

Enhanced Equity Income Fund

March 31, 2018

| Endnotes | and | A dditi | anal Di | colocurac |
|----------|-----|---------|---------|-----------|

- 1 S&P 500 Index is an unmanaged index of large-cap stocks commonly used as a measure of U.S. stock market performance. Cboe S&P 500 BuyWrite Index measures the performance of a hypothetical buy-write strategy on the S&P 500 Index. Unless otherwise stated, index returns do not reflect the effect of any applicable sales charges, commissions, expenses, taxes or leverage, as applicable. It is not possible to invest directly in an index. Performance since inception for an index, if presented, is the performance since the Fund s or oldest share class inception, as applicable.
- ² The shares of the Fund often trade at a discount or premium from their net asset value. The discount or premium of the Fund may vary over time and may be higher or lower than what is quoted in this report. For up-to-date premium/discount information, please refer to http://eatonvance.com/closedend.
- The Distribution Rate is based on the Fund s last regular distribution per share in the period (annualized) divided by the Fund s NAV or market price at the end of the period. The Fund s distributions may be comprised of amounts characterized for federal income tax purposes as qualified and non-qualified ordinary dividends, capital gains and nondividend distributions, also known as return of capital. For additional information about nondividend distributions, please refer to Eaton Vance Closed-End Fund Distribution Notices (19a) posted on our website, eatonvance.com. The Fund will determine the federal income tax character of distributions paid to a shareholder after the end of the calendar year. This is reported on the IRS form 1099-DIV and provided to the shareholder shortly after each year-end. For information about the tax character of distributions made in prior calendar years, please refer to Performance-Tax Character of Distributions on the Fund s webpage available at eatonvance.com. In recent years, a significant portion of the Fund s distributions has been characterized as a return of capital. The Fund s distributions are determined by the investment adviser based on its current assessment of the Fund s long-term return potential. Fund distributions may be affected by numerous factors including changes in Fund performance, the cost of financing for leverage, portfolio holdings, realized and projected returns, and other factors. As portfolio and market conditions change, the rate of distributions paid by the Fund could change.
- ⁴ Depictions do not reflect the Fund s option positions. Excludes cash and cash equivalents.

Fund snapshot and profile subject to change due to active management.

Enhanced Equity Income Fund

March 31, 2018

Portfolio of Investments (Unaudited)

| Common Stocks 98.7% Security | Shares | Value |
|---|------------------------------|--|
| Air Freight & Logistics 2.6% FedEx Corp. | 63,859 | \$ 15,333,184 \$ 15,333,184 |
| Auto Components 2.0% Aptiv PLC | 136,260 | \$ 11,578,012 \$ 11,578,012 |
| Banks 8.0% Bank of America Corp. First Republic Bank JPMorgan Chase & Co. | 594,931 70,731 202,136 | \$ 17,841,981 6,550,398 22,228,896 \$ 46,621,275 |
| Beverages 1.4% Constellation Brands, Inc., Class A | 35,084 | \$ 7,996,345 \$ 7,996,345 |
| Biotechnology 2.8% Celgene Corp. ⁽²⁾ Gilead Sciences, Inc. | 86,402 111,297 | \$ 7,707,922 8,390,681 \$ 16,098,603 |
| Capital Markets 3.4% Charles Schwab Corp. (The) Credit Suisse Group AG | 227,437 453,109 | \$ 11,876,760 7,609,974 \$ 19,486,734 |
| Chemicals 0.6% DowDuPont, Inc. | 59,885 | \$ 3,815,273 \$ 3,815,273 |
| Containers & Packaging 0.9% Ball Corp. | 129,696 | \$ 5,150,228 \$ 5,150,228 |
| Diversified Telecommunication Services 3.1% AT&T, Inc. Zayo Group Holdings, Inc. ⁽²⁾ | 297,384 208,551 | \$ 10,601,740 7,124,102 \$ 17,725,842 |
| Security | Shares | Value |

| Electric Utilities 1.7% NextEra Energy, Inc. | 59,658 | \$ 9,743,941 \$ 9,743,941 |
|--|----------------------------|--|
| Equity Real Estate Investment Trusts (REITs) 2.9% American Tower Corp. Equity Residential Simon Property Group, Inc. | 41,413 84,142 36,557 | \$ 6,018,965 5,184,830 5,642,573 \$ 16,846,368 |
| Food Products 1.4% Mondelez International, Inc., Class A | 188,827 | \$ 7,879,751 \$ 7,879,751 |
| Health Care Equipment & Supplies 3.5% Abbott Laboratories Danaher Corp. | 92,735 148,390 | \$ 5,556,681 14,528,865 \$ 20,085,546 |
| Health Care Providers & Services 1.2% Aetna, Inc. | 40,143 | \$ 6,784,167 \$ 6,784,167 |
| Household Products 1.3% Colgate-Palmolive Co. | 108,787 | \$ 7,797,852 \$ 7,797,852 |
| Insurance 2.9% American Financial Group, Inc. Chubb, Ltd. | 82,746 54,540 | \$ 9,285,756 7,459,436 \$ 16,745,192 |
| Internet & Direct Marketing Retail 3.4% Amazon.com, Inc.(2) | 13,623 | \$ 19,717,113 \$ 19,717,113 |
| Internet Software & Services 7.4% Akamai Technologies, Inc. ⁽²⁾ | | |