Eaton Vance Enhanced Equity Income Fund Form N-CSR November 25, 2016

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

September 30, 2016

Date of Reporting Period

Item 1. Reports to Stockholders

Enhanced Equity Income Fund (EOI)

Annual Report

September 30, 2016

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.

Annual Report September 30, 2016

Eaton Vance

Enhanced Equity Income Fund

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Enhanced Equity Income Fund

September 30, 2016

Management s Discussion of Fund Performance

Economic and Market Conditions

U.S. stock markets recorded solid gains for the 12-month period ended September 30, 2016.

Equity markets opened the period on the upswing, buoyed by continued low interest rates along with positive economic data. In addition to further gains in the U.S. job market, other indicators such as housing and auto sales also showed strength.

Stocks fell in early December 2015 amid worries about an interest rate hike by the U.S. Federal Reserve (the Fed). Expressing confidence in the economy, the Fed finally made its long-anticipated move in mid-December, raising interest rates for the first time in nine years. Following the quarter-point increase, stocks briefly recovered before turbulence struck equity markets in early 2016. Stocks worldwide slid amid worries about falling oil prices, declining interest rates and slowing global growth. However, equity markets turned around in mid-February and soon overcame their earlier losses. Coinciding with the move was a reversal in crude oil prices, which rose following a prolonged decline.

In June 2016, U.S. stocks plunged along with international markets following Britain s Brexit vote to leave the European Union, but equity markets, led by the U.S., quickly rallied from the two-day tailspin and recovered the lost ground. Major U.S stock indexes reached multiple record highs during July and August.

U.S equity markets declined in late August 2016 amid retreating oil prices and fears about a possible interest rate increase. The Fed s decision at its September meeting to leave rates unchanged sent stocks higher. The Organization of the Petroleum Exporting Countries (OPEC) announced an agreement near the end of the period to curb oil production.

The blue-chip Dow Jones Industrial Average² advanced 15.46% for the 12-month period, while the broader U.S. equity market, as represented by the S&P 500 Index, returned 15.43%. The technology-laden NASDAQ Composite Index delivered a 16.42% gain. Small-cap U.S. stocks (as measured by the Russell 2000[®] Index) generally fared better than their large-cap counterparts (as measured by the Russell 1000[®] Index). Value stocks as a group outpaced growth stocks in both the large- and small-cap categories, as measured by the Russell 1000[®] Value Index, Russell 2000[®] Value Index, Russell 2000[®] Growth Index and Russell 2000[®] Growth Index.

Fund Performance

For the 12-month period ended September 30, 2016, Eaton Vance Enhanced Equity Income Fund (the Fund) had a total return of 9.74% at net asset value (NAV), underperforming

the 15.43% return of the Fund s equity benchmark, the S&P 500 Index (the Index), but outperforming the 8.48% return of the Fund s options benchmark, the CBOE S&P 500 BuyWrite Index. The Fund s common stock allocation and the Fund s option strategy both contributed to the Fund s underperformance versus the Index.

Within the Fund s common stock portfolio, stock selection in the financials, information technology (IT) and health care sectors detracted from Fund performance versus the Index. In financials, the Fund s out-of-Index position in financial services giant Credit Suisse Group AG declined in value as efforts by a new management team to restructure the business and improve profits proved less successful than planned, due to industry and regulatory headwinds, as well as a weak eurozone economy. Tableau Software, Inc., an out-of-Index Fund holding in the IT sector, lost value because its sales cycle for new software contracts lengthened, causing growth expectations for the company to fall. In health care, the Fund s out-of-Index holding in Teva Pharmaceutical Industries, Ltd. ADR and overweight positions, relative to the Index, in drug makers

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Allergan PLC and Perrigo Co. PLC detracted from performance versus the Index. All three stocks were hurt by headline news about high drug prices, which raised concerns during an election year that a new administration might press for increased scrutiny of drug prices. By period-end, Credit Suisse, Tableau Software, Teva Pharmaceutical and Perrigo had been sold out of the Fund.

In contrast, stock selection in the industrials, consumer discretionary and utilities sectors helped Fund performance versus the Index. Within industrials, the Fund s overweight position in Rockwell Automation, Inc. performed strongly on improving long-term expectations for its industrial automation and software business and an improving outlook for its oil and gas industry business. An overweight position in Amazon.com, Inc. contributed to results versus the Index in consumer discretionary, as improved transparency in the firm s financial reporting appeared to increase investor confidence in Amazon s profitability.

The Fund s option strategy detracted from performance relative to the Index, as would be expected during a period of largely positive equity market performance. The option strategy, which is designed to help limit the Fund s exposure to market volatility and contribute to current income, can be beneficial during times of market weakness, but may detract from performance during periods of market strength. When the market was trending upward, as it was for much of the 12-month period, the Fund s writing of covered call options hurt performance versus the Index, as premium income was relatively low and covered calls ended in losses.

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.

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Enhanced Equity Income Fund

September 30, 2016

Performance²

Portfolio Manager Michael A. Allison, CFA

% Average Annual Total Returns	Inception Date	One Year	Five Years	Ter	1 Years
Fund at NAV	10/29/2004	9.74%	13.19%		5.86%
Fund at Market Price		15.29	14.57		5.03
S&P 500 Index		15.43%	16.35%		7.23%
CBOE S&P 500 BuyWrite Index		8.48	9.91		4.36
% Premium/Discount to NAV ³					
					6.78%
Distributions ⁴					
Total Distributions per share for the period				\$	1.037
Distribution Rate at NAV					7.64%
Distribution Rate at Market Price					8.20%
Fund Profile					

Sector Allocation (% of total investments)⁵

Top 10 Holdings (% of total investments)⁵

Apple, Inc.	4.2%
Alphabet, Inc., Class C	4.1
Amazon.com, Inc.	3.9
Microsoft Corp.	3.7
Visa, Inc., Class A	3.0
Johnson & Johnson	3.0

Celgene Corp.	2.5
General Electric Co.	2.4
Altria Group, Inc.	2.4
JPMorgan Chase & Co.	2.4
Total	31.6%

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.

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Enhanced Equity Income Fund

September 30, 2016

Fund Snapshot

Objective	The primary investment objective is to provide current income, with a secondary objective of capital appreciation.	
Strategy	The 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 ²	S&P 500 Index	
Morningstar Category	Large Growth	
Distribution Frequency	Monthly	
Common Stock Portfolio		
Positions Held	55	
% US / Non-US	98.9/1.1	
Average Market Cap	\$165.4 Billion	
Call Options Written		
% of Stock Portfolio	44%	
Average Days to Expiration	24 days	
% Out of the Money	4.6%	

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.

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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

September 30, 2016

Endnotes and Additional Disclosures

- ¹ The views expressed in this report are those of the portfolio manager(s) and are current only through the date stated at the top of this page. These views are subject to change at any time based upon market or other conditions, and Eaton Vance and the Fund(s) disclaim any responsibility to update such views. These views may not be relied upon as investment advice and, because investment decisions are based on many factors, may not be relied upon as an indication of trading intent on behalf of any Eaton Vance fund. This commentary may contain statements that are not historical facts, referred to as forward looking statements. The Fund s actual future results may differ significantly from those stated in any forward looking statement, depending on factors such as changes in securities or financial markets or general economic conditions, the volume of sales and purchases of Fund shares, the continuation of investment advisory, administrative and service contracts, and other risks discussed from time to time in the Fund s filings with the Securities and Exchange Commission.
- ² Dow Jones Industrial Average is a price-weighted average of 30 blue-chip stocks that are generally the leaders in their industry. S&P 500 Index is an unmanaged index of large-cap stocks commonly used as a measure of U.S. stock market performance. NASDAQ Composite Index is a market capitalization-weighted index of all domestic and international securities listed on NASDAQ. Russell 2000[®] Index is an unmanaged index of 2,000 U.S. small-cap stocks. Russell 1000[®] Index is an unmanaged index of 1,000 U.S. large-cap stocks. Russell 1000[®] Value Index is an unmanaged index of 1,000 U.S. large-cap stocks. Russell 2000[®] Value Index is an unmanaged index of U.S. small-cap value stocks. Russell 2000[®] Growth Index is an unmanaged index of U.S. small-cap value stocks. Russell 2000[®] Growth Index is an unmanaged index of U.S. large-cap growth stocks. Russell 2000[®] Growth Index is an unmanaged index of U.S. small-cap growth stocks. 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.
- ³ 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.
- ⁴ 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.
- ⁵ 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

September 30, 2016

Portfolio of Investments

Common Stocks 97.8%)

Security	Shares	Value
Aerospace & Defense 1.9% United Technologies Corp.	98,643	\$ 10,022,129
		\$ 10,022,129
Air Freight & Logistics 1.0% C.H. Robinson Worldwide, Inc.	75,931	\$ 5,350,098
		\$ 5,350,098
Auto Components 0.6% Goodyear Tire & Rubber Co. (The)	90,749	\$ 2,931,193
Goodyear The & Rubber Co. (The)	90,749	\$ 2,931,193 \$ 2,931,193
Banks 6.0% JPMorgan Chase & Co. PNC Financial Services Group, Inc. (The) Wells Fargo & Co.	188,945 78,001 272,729	\$ 12,581,848 7,027,110 12,076,440 \$ 31,685,398
Beverages 1.7% Constellation Brands, Inc., Class A	53,952	\$ 8,982,468
		\$ 8,982,468
Biotechnology 2.4% Celgene Corp. ⁽²⁾	122,913	\$ 12,848,096 \$ 12,848,096

Charles Schwab Corp. (The) Goldman Sachs Group, Inc. (The)	398,085 58,822	\$ 12,567,543 9,486,224 \$ 22,053,767
Chemicals 1.4% PPG Industries, Inc.	69,738	\$ 7,208,120 \$ 7,208,120
Communications Equipment 1.9% Cisco Systems, Inc.	315,772	\$ 10,016,288 \$ 10,016,288
Containers & Packaging 1.4% International Paper Co.	156,195	\$ 7,494,236 \$ 7,494,236
Security	Shares	\$ 7,494,230 Value
Distributors 1.6% LKQ Corp. ⁽²⁾	241,942	\$ 8,579,263
		\$ 8,579,263
Diversified Telecommunication Services 2.7% Verizon Communications, Inc. Zayo Group Holdings, Inc. ⁽²⁾	117,528 282,446	\$ 6,109,105 8,391,471 \$ 14,500,576
Electric Utilities 1.6% NextEra Energy, Inc.	67,765	\$ 8,289,015 \$ 8,289,015
Electrical Equipment 1.6% Rockwell Automation, Inc.	71,283	\$ 8,720,762 \$