

NEWS

The Evergreen State College
Olympia, Washington 98505

for immediate release
February 4, 1976

for further information
Judy Annis, 866-6128 or
Dr. Michael Beug, 866-6718

Students at The Evergreen State College have added just one more piece to the puzzle --- the puzzle scientists the world over are trying to complete on the volume, distribution and impact of the chemical pollutant known as PCBs (polychlorinated biphenyls).

Over the past six months, eight young Evergreen scientists have been gathering data on PCB distribution at 18 points in Puget Sound --- from the mouth of the Duwamish River to Bremerton, from Tacoma's Brown's Point to the Port of Olympia; from Shelton's Hammersley Inlet to Grapeview.

Their conclusions, reported to the National Science Foundation's Student Originated Studies Program which funded their research, indicate that PCB distribution is highest near areas of heavy industrialization and high population (Seattle and Tacoma), at moderate levels near areas with moderate industrialization (Bremerton) and lowest at areas farthest removed from industrialization and large population centers (Grapeview and Purdy).

Gathering that data took months of collecting specimens throughout the Sound and analyzing them in laboratories at Evergreen. But, interpreting the data to predict environmental consequences proves to be an even more demanding task.

PCBs are defined as "toxic aromatic chlorinated hydrocarbon pollutants," which are related to DDT and can be found on land and in the seas throughout the world. They are used widely for insulating fluids in capacitors and transformers and as hydraulic and heat transfer fluids. PCBs have also been used in sealants, adhesives,

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paints and printing inks, and even in pesticides.

Evidence indicates PCBs, once released into the environment, do not decompose. Estimates are that up to 50 tons of PCBs are lost or released into the environment per year --- through vaporization and open burning of PCB-containing materials, through leaks and disposal of transformer oils, hydraulic fluids and lubricants, and through disposal at dumps and landfills.

Not only do these PCBs not decompose, they biomagnify. Dr. Michael Beug, Evergreen faculty chemist and advisor to the student project, says biomagnification means "that higher organisms accumulate greater amounts of PCBs than lower organisms." For example, Dr. Beug says, data students gathered shows that PCBs are absorbed by 'primary consumers' (lower animals like limpets which are the first to absorb PCBs) at one level of concentration. But, when a 'secondary consumer' (an organism like a starfish which is higher in the food chain) eats or absorbs PCBs, the level of concentration increases.

Applying available research to the data they gathered, Evergreen students conclude that "PCB concentrations found in most of Southern Puget Sound probably do not approach recognized toxicity levels."

However, at the mouth of the Duwamish River --- one-half mile downstream from where a transformer tipped over in September 1974 and released more than 200 gallons of fluid containing PCBs into the river --- samples of mussels, bottom fish and surface sediments contained **drastically higher levels of PCBs than those gathered at any** other point in the Sound.

For example, there were 840 ppb (parts per billion) of PCBs found in cottids (bottom fish) taken at the mouth of the Duwamish, compared to 550 ppb of PCBs found in cottids from Commencement Bay near Ruston; 62 ppb of PCBs in fish from Shelton waters, and 21 ppb in cottids taken from Grapeview. Or, examined another way, the volume of PCBs found at the Duwamish was 38 times higher than those found at Grapeview.

To put that ppb figure in perspective, Dr. Beug points out that the Environmental Protection Agency will not permit the sale of any product for human consumption

which has more than 5000 ppb of PCBs.

A check for PCBs in samples of sediment from the same four areas reveals even more dramatic statistics: 300 ppb of PCBs at the Duwamish; 17 ppb of PCBs near Ruston; 3.1 ppb at Shelton, and 0.65 at Grapeview. Or, the concentrations of PCBs at the Duwamish were 461 times greater than near Grapeview. The relationships between Shelton and Grapeview PCB concentrations shifted somewhat when samples were taken from mussels in the same four areas: 210 ppb of PCBs from mussels taken at the mouth of the Duwamish; 38 at Commencement Bay; 16 at Grapeview and 11 at Shelton.

The significance of these and similar figures in the 40-page report to NSF is not limited to comparative analysis among the 18 sites on the Sound, Dr. Beug said.

"What's important is that data gathered by Evergreen students establishes present PCB distribution for these 18 sites. This means we will be able to compare this data with future information collected and determine what trends, if any, are appearing. The data also enables scientists worldwide to add our research to the pieces of information they've gathered."

PCBs have been reported in fish from all the major waterways of the United States, from the Rhine River, the coast of the Netherlands, and Tokyo, Japan; in seals near Scotland; pelican eggs from Panama; and penguin eggs from Antarctica.

"Now we can add data collected on Puget Sound marine life to that research," Dr. Beug concludes.

Obviously, more PCB research lies ahead for scientists throughout the world. They have yet to determine what the lethal and sub-lethal levels are for most species, and what can be done to prevent PCB pollution from endangering any more areas than it already has.

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Ten graduates of Timberline High School are currently attending The Evergreen State College. The ten are among 49 students from Thurston County high schools enrolled at Evergreen Winter Quarter.

Timberline High School alums at Evergreen include: Eric Berkey, Timothy Gillie, Laura Hogge, Margaret Knowles, Hubard Kuokka, Roshea Schouviller, John Smalley, Omar Turkell, Robin West and Cynthia White.

Thirty-one alums from Olympia High, three from North Thurston, two each from Yelm and the Thurston County Off Campus School and one graduate of Tumwater High are also attending Evergreen.

-30-

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NEWS

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Forty-nine graduates of Thurston County high schools are currently attending The Evergreen State College. The 49 include 31 from Olympia High School, ten from Timberline, three from North Thurston, two each from Yelm and the Thurston County Off Campus School and one from Tumwater.

Included among the Olympia High School graduates enrolled at Evergreen Winter Quarter are: David Alexander, James Arnold Jr., James Barrett, Dorothy Barron, Sutapa Basu, Susan Beck, Melita Brombacher, Laura Claffy, Michael Dickerson, Gary Dubuque, Jay Fuller, Mark Gottlieb, Susan Hall, Jon Hunter, William Ingersoll, Dorothy Jackson, Marta Kick, William Kicklighter, Gayle Layton, Geoffrey Layton, Penny Matthiesen, Rex Munger, Douglas Murray, Laura Neal, Katie Rodgers, Darlene Streitmatter, Caryn Swan, Nanda Unsoeld, Mary Wilkins, David Worman and Greg Youtz.

Timberline High School grads now attending Evergreen include: Eric Berkey, Timothy Gillie, Laura Hogge, Margaret Knowles, Hubard Kuokka, Roshea Schouviller, John Smalley, Omar Turkell, Robin West and Cynthia White.

Other Thurston County alums include Suzanne Edenstrom, Robert Rieck and David Stepetin, all from North Thurston; Diane Detering and Annie Olson, from the Thurston County Off Campus School; Glenn Hansen and Laura Shippentower, from Yelm, and Larry Stout of Tumwater.

NEWS

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Three graduates of North Thurston High School are currently attending The Evergreen State College. The three are among 49 students from Thurston County high schools enrolled at Evergreen Winter Quarter.

North Thurston alums at Evergreen are Suzanne Edenstrom, Robert Rieck and David Stepetin. Thirty-one alums from Olympia High, ten from Timberline, two each from Yelm and the Thurston County Off Campus School and one graduate of Tumwater High are also attending Evergreen.

-30-

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NEWS

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Two Yelm High School alums are currently enrolled at The Evergreen State College. Laura Shippentower, daughter of Mr. and Mrs. Donald McCloud of Yelm, is a senior at Evergreen studying on an individual contract with Faculty Member Mary Ellen Hillaire; and Glenn Hansen, a 1970 graduate of Yelm and son of Mrs. Pauline Hansen of Route 1, is a sophomore enrolled in "The Shape of Things to Come", a three-quarter program combining study of psychology, sociology and drama.

The two are among a total of 49 graduates of Thurston County high schools enrolled at Evergreen Winter Quarter.

-30-

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NEWS

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for further information
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Thirty-one graduates of Olympia High School are currently attending The Evergreen State College. All enrolled for Winter Quarter are: David Alexander, James Arnold Jr., James Barrett, Dorothy Barron, Sutapa Basu, Susan Beck, Melita Brombacher, Laura Claffy, Michael Dickerson, Gary Dubuque, Jay Fuller, Mark Gottlieb, Susan Hall, Jon Hunter, William Ingersoll, Dorothy Jackson, Marta Kick, William Kicklighter, Gayle Layton, Geoffrey Layton, Penny Matthiesen, Rex Munger, Douglas Murray, Laura Neal, Katie Rodgers, Darlene Streitmatter, Caryn Swan, Nanda Unsoeld, Mary Wilkins, David Worman and Greg Youtz.

The 31 are among 49 graduates of Thurston County high schools enrolled at Evergreen. Also enrolled are ten graduates from Timberline, three from North Thurston, two each from Yelm and the Thurston County Off Campus School and one from Tumwater.

-30-

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NEWS

The Evergreen State College
Olympia, Washington 98505

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Judy Annis, 866-6128

Two graduates of Mark Morris High School are currently enrolled at The Evergreen State College. Suzanne Hall, a 1972 graduate and daughter of Mr. and Mrs. William Hall of 3143 Wildwood Drive, is an Evergreen senior studying law and justice; and Paul Mendenhall, also a member of the Class of 1972 and son of Mr. and Mrs. Wilfred Mendenhall of 13 Alpine Way, is a sophomore studying culture and sociological history of art and architecture.

-30-

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NEWS

The Evergreen State College
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68-2780

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Judy Annis, 866-6128

Three graduates of R. A. Long High School are currently attending The Evergreen State College. The three are Gary Fink, Robert Molt and William Smith. They are among eight students from the Longview-Kelso area enrolled at Evergreen Winter Quarter.

-30-

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NEWS

The Evergreen State College
Olympia, Washington 98505

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for further information
Judy Annis, 866-6128

Three graduates of Kelso High School are currently attending The Evergreen State College. The three are Melvin Newton, Jonelle Pintello and Crystal Tack. They are among eight students from the Longview-Kelso area enrolled at Evergreen Winter Quarter.

-30-

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NEWS

The Evergreen State College
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February 2, 1976

for further information
Judy Annis, 866-6128

Two graduates of Mead High School are currently attending The Evergreen State College. Linda Breeden a 1972 graduate and daughter of Mr. and Mrs. Lloyd Breeden is a senior at Evergreen, as is Tamara Swift, daughter of Mr. and Mrs. Richard Swift.

-30-

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NEWS

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Gina Duell, a 1973 graduate of Woodway High School, is currently attending Ms. Duell, an Evergreen sophomore, is the daughter of Mr. and Mrs. Howard Duell of 22616 90th West. She is studying weaving and fiber arts at Evergreen.

-30-

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NEWS

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Olympia, Washington 98505

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for further information
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Carolyn Knapp, a 1973 graduate of Deer Park High School, is currently enrolled at The Evergreen State College. Carolyn is the daughter of Mr. and Mrs. Carl Knapp of Route 2.

-30-

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NEWS

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Olympia, Washington 98505

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February 2, 1976

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Two graduates of Hanford High School are currently attending The Evergreen State College. David W. Taylor, a 1974 graduate and son of Mr. and Mrs. Walter Taylor of 33 Vienna Court, is enrolled Winter Quarter, along with Melee Valett, a 1975 alum from Hanford and daughter of Mr. and Mrs. Bryan B. Valett of 609 Catskill.

-30-

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NEWS

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February 2, 1976

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Judy Annis, 866-6128

Six Columbia High School graduates are currently attending The Evergreen State College. They are among 13 students from the Tri-Cities area enrolled at Evergreen Winter Quarter.

From Columbia High are Lois Etheridge, Madeline Mullen, Ronald Olson, Monica Schwinberg, Jacqueline Whiting, and Marvin Young.

Four students from Pasco High School, two from Hanford, and one from Kennewick are also enrolled at Evergreen this quarter.

-30-

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NEWS

The Evergreen State College
Olympia, Washington 98505

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February 3, 1976

for further information
Judy Annis, 866-6128

Four Pasco High School graduates are currently attending The Evergreen State College. They are among 13 students from the Tri-Cities area enrolled at Evergreen Winter Quarter.

From Pasco High School are: Jill Gillis, Marian Gonzales, Danny Henry and Steven Layton.

Six Columbia High School graduates two from Hanford and one Kennewick High alum are also enrolled at Evergreen this quarter.

-30-

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NEWS

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February 2, 1976

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Seven graduates of Kent area schools are currently attending The Evergreen State College -- six from Mount Rainier High School and one from Kent Meridian.

Alums from Mount Rainier include Leslie Clark, Glen Fithian, Paul Ledbetter, Ian McDonald, Heidi Sargent, Douglas Taylor and Torre Thompson. Leonard Wallick, a graduate of Kent Meridian High School, is also enrolled at Evergreen Winter Quarter.

-30-

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The Evergreen State College
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Eight graduates of Longview area high schools are currently attending The Evergreen State College -- three from Kelso High, three from R. A. Long, and two from Mark Morris high.

Kelso graduates attending Evergreen include Melvin Newton, Jonelle Pintello and Crystal Tack.

Graduates of R. A. Long enrolled at Evergreen Winter Quarter are Gary Fink, Robert Molt and William Smith.

Suzann Hall and Paul Mendenhall, both graduates of Mark Morris High, are also attending The Evergreen State College.

-30-

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NEWS

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Three graduates of Deer Park area High Schools are currently attending The Evergreen State College -- two from Mead High School and one from Deer Park.

Carolyn Knapp, a 1973 graduate of Deer Park, and daughter of Mr. and Mrs. Carl Knapp of Route 2, Deer Park, is enrolled at Evergreen Winter Quarter; along with Mead High School graduates Linda Breeden, daughter of Mr. and Mrs. Lloyd Breeden of 11707 N. Waikiki Road in Spokane, and Tamara Swift, daughter of Mr. and Mrs. Richard Swift of Route 5, Spokane.

-30-

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NEWS

The Evergreen State College
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Five graduates of Edmonds high schools are currently attending The Evergreen State College -- four from Meadowdale and one from Woodway.

Meadowdale alums enrolled Winter Quarter are Robert Donker, Barbara Greene, Douglas Hamilton and Mike Hovis. Gina Duell, a graduate of Woodway High School, is also attending Evergreen this quarter.

-30-

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NEWS

The Evergreen State College
Olympia, Washington 98505

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for further information
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Thirteen Tri-Cities area students are currently attending The Evergreen State College--six from Columbia High, four from Pasco High, two from Hanford, and one from Kennewick High.

From Columbia are: Lois Etheridge, Madeline Mullen, Ronald Olson, Monica Schwinberg, Jacqueline Whiting, and Marvin Young. Pasco High School graduates attending Evergreen include Jill Gillis, Marian Gonzales, Danny Henry and Steven Layton.

Hanford students now enrolled at The Evergreen State College are David Taylor and Melee Valett. Kennewick alum Lorie Booth-Silk is also enrolled at Evergreen Winter Quarter.

-30-

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NEWS

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Ricky Dewall a 1975 graduate of Kahlotus High School, is currently enrolled at The Evergreen State College. Dewall, son of Mr. and Mrs. Sam Young of Kahlotus, is a freshman at Evergreen Winter Quarter, and is enrolled in a basic Coordinated Studies program called "Ethics and Politics", which offers combined study of urban planning, philosophy, corrections and political science.

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Information Services

NEWS

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Two graduates of Lynden High School are currently attending The Evergreen State College. Jill Likkell, a 1975 graduate of LHS and daughter of Mr. and Mrs. Gerrit Likkell of 113 East Front Street, is a freshman enrolled in a three-quarter program called "Health: Individual and Community", which combines study of biology, psychology and planning. Carolyn Servid, a 1971 Lynden alum and daughter of Mr. and Mrs. Lester Servid of 1001 East Front Street, is a senior studying "From Homer to Hemingway", a program combining examination of literature and languages.

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NEWS

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Margaret Floyd, a Langley High School graduate, is currently attending The Evergreen State College. Ms. Floyd, daughter of Mr. and Mrs. Jack Floyd of Langley, is a junior at Evergreen studying field biology and ecology.

-30-

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NEWS

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Two graduates of Morton High School are currently attending The Evergreen State College. Deborah Carbaugh, a 1975 graduate of Morton HS, is the daughter of Mr. and Mrs. John Carbaugh of Route 4. She is a freshman studying Criminology in America. Kathy Rich, a 1973 Morton graduate and daughter of Mr. and Mrs. L. D. Rich of Morton, is a junior studying psychology.

-30-

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Information Services

NEWS

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Rodney Hendricks, a 1974 graduate of Montesano High School, is currently attending The Evergreen State College. Hendricks, son of Mr. and Mrs. Lane Hendricks of 2729 Cherry Street, Hoquiam, is a freshman at Evergreen, where he is enrolled in a study program called "Environments, Perception and Design", which offers examination of environmental design, art, psychology, sociology and biology.

-30-

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NEWS

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Twenty-six graduates of Mercer Island High School are enrolled at The Evergreen State College Winter Quarter.

The 26 include: John Adams, David Bottenfield, Jody Brotman, Bette Brunett, Mark Bullis, John Burnell, Howard Davis, Richard Denny Jr., Richard Dowd, Herbert Gaskill, Bruce Golub, Ronald Greengard, Dennis Lee, Julie Lein, Becky Lyons, John Lyons, Mark Machlis, Ross Matteson, Shauna Matteson, Hart Miller, Alan Sidel, Sarah Skinner, Jimi Stephens, Conni Strobe, Sheri Wertheimer, and Patrick Williams.

-30-

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NEWS

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Two Mount Vernon High School graduates are currently attending The Evergreen State College. Patrick Cannon, a 1963 graduate of Mount Vernon High, and son of Mrs. Gladys Cannon of South Sixth Street, is a freshman studying performing arts Winter Quarter at Evergreen. James Kahle, who enrolled at Evergreen last Fall and formerly resided at 2291 Lakeside Lane in Mount Vernon, is also studying performing arts. Both men are enrolled in the "Live and Recorded Performing Arts Program", which offers combined study of drama, music, film and dance.

-30-

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NEWS

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Two Moses Lake High School graduates are currently attending The Evergreen State College. Kenneth Coffin, a 1971 graduate of MLHS is a junior studying foundations in natural science, which offers combined work in chemistry, mathematics, physics, and earth science; and Joel Gilman, a 1974 alum, is also a junior, studying information, research and communications.

-30-

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NEWS

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CS-2700

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Five graduates of Issaquah High School are currently attending The Evergreen State College. Mark Gilbert, Richard Jones, Diane Morton, Geoffrey Seland, and Michael Ushakoff are all enrolled at Evergreen Winter Quarter.

-30-

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Information Services

NEWS

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for further information
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Two Selkirk High School graduates are currently attending The Evergreen State College. Susan Marvin, a 1973 graduate and daughter of Mrs. Irma Marvin of Ione is in her sophomore year at Evergreen, while Gary Olive, a 1973 Selkirk alum and son of Mr. and Mrs. George Olive of Metaline Falls, is a junior at the state's newest four-year college.

-30-

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NEWS

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for immediate release
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for further information
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James R. Sayce, a 1973 graduate of Ilwaco High School, is currently enrolled at The Evergreen State College. Sayce, son of Mr. and Mrs. Clyde Sayce of Ocean Park, is a junior at Evergreen, where he is studying marine biology.

-30-

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Information Services

NEWS

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Olympia, Washington 98505

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Four graduates of Meadowdale High School are currently attending The Evergreen State College. The four are among five Edmonds area students enrolled at Evergreen Winter Quarter. They are Robert Donker, Barbara Greene, Douglas Hamilton and Mike Hovis.

-30-

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