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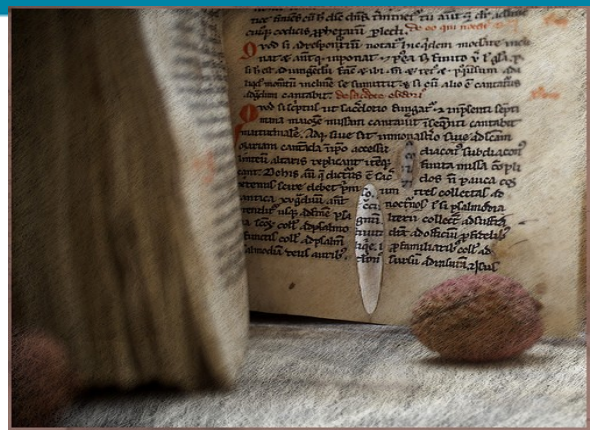
JPEG 2000 for the practitioner

What did JPEG 2000 ever do for us?

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JPEG2000: why should we care?



- "TIFF is so very 1990's, darling"
- "JPEG 2000 is cool and froody"
- Files are getting bigger:

  more resolution, larger bit depths...
- Files are now counted in millions
- Digital preservation strategy can cope with

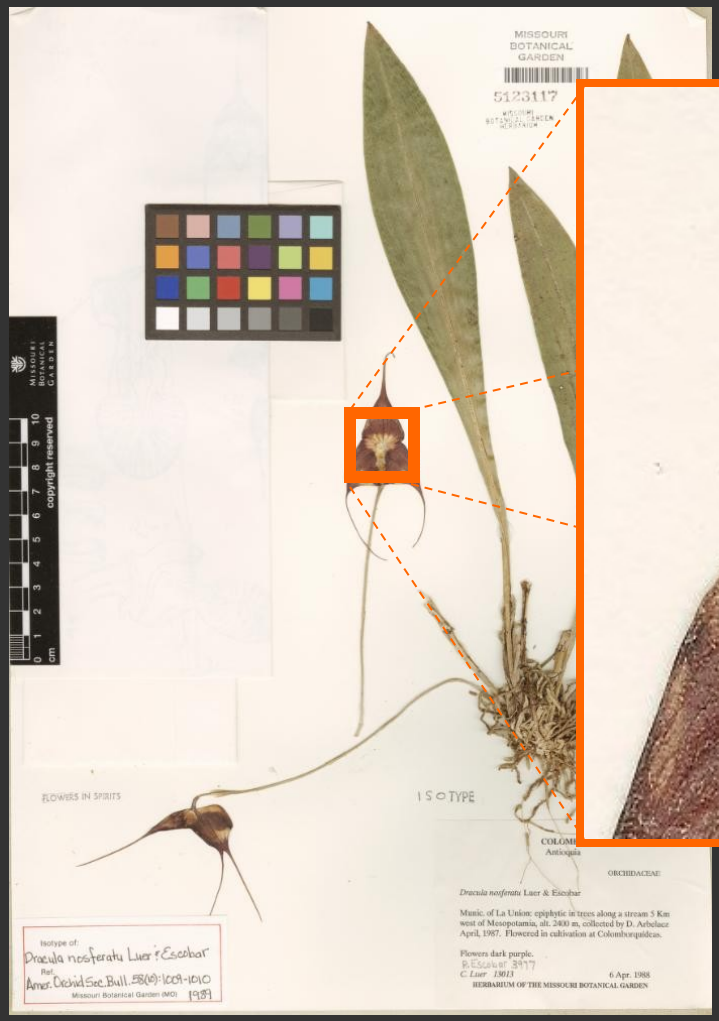
  compression now

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JPEG2000: Some of the claimed benefits

- Open Standard
- Improved Compression Efficiency
- Mathematically Lossless Compression
- Graceful Degradation
- Scalability
- Dynamic Bandwidth Allocation
- Robust Transmission
- Easy Post-Production
- Region of Interest (ROI)
- Low Latency
- Constant Quality through Multiple Generations
- Encoding - Decoding Processing Power
- License-Free
- Codec's Comparison Chart

Region Extraction



"Give me *x*,*y* coordinates at *z* resolution."



72ppi: 20KB JPG

600ppi, 200MB TIF; encode to 100MB JP2

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Financial realities



- **JPEG 2000 is popular primarily for the money it can save us**
- **Too blunt? Well consider:**
  - **Total cost of ownership of 1Tb can be between £2,500 - £6,000 per annum depending on configuration.**
  - **This is purely storage costs, not even considering other digital preservation cost elements.**
- **The British Library: over 150 million items.**
  - **Books alone would generate over 3.5 billion pages.**

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Financial realities

- BL storage sizes for Microsoft/British Library 75,000 19th Century Books (as reported by Aly Conteh www.slideshare.net/JISCDigi/aly)
  - TIFF = 53 MB
  - JP2K = 17 MB
  - JP2K (lossy) = 4 MB
- Assuming £2,500 per Tb per annum, then the total savings in storage costs alone per 1,000,000 pages is:
  - JP2K vs TIFF = ~£86,000 per annum
  - JP2K (lossy) vs TIFF = ~£116,000 per annum
  - JP2K (lossy) vs JP2K = ~£31,000 per annum

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So what still challenges us?

- Displaying JPEG200 in native Web browser environments without any plug-ins/extensions?
- Converting to JPEG2000 from RAW or TIFF – process still feels like engineering. Kakadu scripting anyone?
- Adobe Photoshop et al support still poor
- Bottlenecks still abound in workflows for conversion on the fly
- Can JPEG2000 really be a one stop shopping experience for the future?
  - as a digital preservation format or delivery option?

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